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rejection then reasons, based on the above passage from Clement, that because the claims are broader in "at least one" aspect germane to the prior art rejection in the original prosecution, the recapture rule bars the claims.

But this misquotes Clement, which does not state that claims broader "in at least one" aspect germane to a prior art rejection are barred. Rather, the passage in Clement states that claims broader in "an aspect" germane to a prior art rejection but narrower in an unrelated aspect are barred. Of course, that is clearly not the case here.

The reissue claims at issue are narrower in an aspect directly related to the prior art rejection in the original prosecution at least because they are limited to albumin protein.

Finally, the rejection notes:

Whether recapture of surrendered subject matter is permitted or not is, of course, a different issue from whether or not the subject matter was surrendered during prosecution of the parent application, and the permissibility of the recapture is addressed in the final office action and elsewhere in this advised advisory action. Office Action, page 5

Applicants strongly object to this reasoning. The law is clear that surrender is precedent to application of the recapture rule. In re Clement, 131 F.3d 1464, 1469 (Fed. Cir. 1997) (the recapture rule does not apply in the absence of evidence that the applicant's amendment was "an admission that the scope of that claim was not in fact patentable," Seattle Box Co. v. Industrial Crating & Packing, Inc., 731 F.2d 818, 826, 221 USPQ 568, 574 (Fed. Cir. 1984)); Mentor, 998 F.2d at 995-96, 27 USPQ2d at 1524-25; Ball, 729 F.2d at 1438, 221 USPQ at 296; Seattle Box Co., 731 F.2d at 826, 221 USPQ at 574 (declining to apply the recapture rule in the absence of evidence that the applicant's "amendment ... was in any sense an admission that the scope of [the] claim was not patentable"); In re Willingham, 48 C.C.P.A. 727, 282 F.2d 353, 354, 357, 127 USPQ 211, 213, 215 (CCPA 1960) (no intent to surrender where the applicant canceled and replaced a claim without an intervening action by the examiner).

Here, the absence of surrender is apparent from the prosecution history as a whole. For example, applicants did not argue or distinguish the references on the basis of protein concentration, cross linking agent concentration, or burst strength or the distinction between "serum" albumin and albumin protein. Applicants did not cancel any claim during the original prosecution that was of the breadth of the present reissue claims. Unlike the situation in Clement

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the applicant did not signal surrender of specific limitations in response to a series of office actions.

The prosecution history of the Barrows et al. patent is relatively straightforward. There were only two substantive office actions prior to allowance. In the first, all of the claims were rejected as obvious (office action mailed March 7, 1995). In the response following this action (filed June 7, 1995), applicants cancelled and replaced the composition claims and a method of making a composition claim with a new claim set that included in the independent claims limitations to identify the protein as serum albumin, to specify the protein and crosslinking agent concentration, and to recite that the composition cured to a substantive matrix with a burst strength of about 10 mmHg or greater.

The method of treatment claims, on the other hand, were not cancelled or amended in a substantive way. They were amended only to recite "topically" applying the adhesive mixture, to satisfy an examiner's objection that the claims were indefinite (see office action mailed March 7, 1995, p. 2).

In the remarks, applicants distinguished the references on the basis that they failed to suggest that the combination of albumin protein and polyoxyethylene would function as a tissue adhesive or sealant. Specifically, applicants argued (emphasis ours):

[O]riginal claims 1-21 were rejected under 35 U.S.C. §103...Importantly, there is nothing in the references, alone or combined, which suggests that the recited combination of serum albumin protein and crosslinking agent would function as an *in vivo* tissue adhesive or sealant nor is there any motivation to combine the references in the manner suggested.

In the second office action, the claims were rejected as obvious over a new reference (office action mailed September 29, 1995). No claim amendments were made in the response (response filed January 26, 1996). The new reference was distinguished on the same basis argued in the first office action. Applicants argued:

[C]laims 18-34...were rejected in the outstanding action under 35 U.S.C. §103...Importantly, there is nothing in the references, alone or combined, which suggests that the recited combination of serum albumin protein and crosslinking agent would function as *in vivo*

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tissue adhesive or sealant nor is there any motivation to combine the references in the manner suggested. Specifically, Kowanko does not teach or suggest using a cross-linking agent such as PEG. Kowanko uses PEG as a thickening agent, not as a cross-linking agent. See, e.g., Kowanko at column 3, lines 3-9. Furthermore, the Abuchowski et al. and D'Urgo references report immunogenically modified materials but do not teach or suggest adhesive or sealant properties. These listed references do not report any teaching or suggestion of the present invention.

Certainly, from the remarks and amendments, it cannot be said that the broader aspects of the reissue claims were surrendered during the prosecution. The remarks must be specific to trigger a surrender. As stated in the MPEP:

The argument that the claims limitation defined over the rejection must have been specific as to the limitation; rather than a general statement regarding the claims as a whole. In other words, a general "boiler plate" sentence will not be sufficient to establish recapture. MPEP 1412.02

The remarks in this case do not place any special emphasis on the broader features of the reissue claims. While they do emphasize the importance of the combination of serum albumin and crosslinking agent, they do not rely on the distinction between "serum" albumin and albumin protein to distinguish the art. Moreover, the protein and crosslinking agent concentrations are not even mentioned, let alone specifically relied upon.

It is true that there is discussion of the burst strength in both the first and second response. But these remarks, appearing after the references were distinguished, only emphasize the importance of curing to a substantive matrix.

Finally, during the original prosecution, the method of treatment claims themselves were not per se amended in any substantive way. Rather it was the composition claims that were amended, with the method of treatment claims being amended only because they refer to the composition claims. This latter circumstance clearly points to an error in the original prosecution of not fully appreciating the method of treatment aspects of the invention which Applicants now seek to protect in their reissue. It is just this sort of error the reissue statute is meant to address.

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Applicants urge reconsideration of the reasoning under the recapture rule and the application of the case law. In essence, the reasoning of the rejection proposes a rule that a reissue claim broader in any aspect related to an amendment in light of a prior art rejection in the original prosecution is barred. This is directly contrary to Ball, Richman and Clement.

In fact, the analysis provided in the rejection is contrary to the methodology set out in the MPEP. For example, the MPEP states:

If the broadening aspect of the reissue claims relates to subject matter previously surrendered, the Examiner must determine whether the newly added narrowing limitation in the reissue claim modifies the claim such that the scope of the claim no longer results in a recapture of the surrendered subject matter. If the narrowing limitation modifies the claim in such a manner that the scope of the claim no longer results in a recapture of the surrendered subject matter, then there is no recapture. In this situation, even though a rejection based on recapture is not made, the examiner should make of record the reason(s) why, as a result of the narrowing limitation, there is no recapture. MPEP 1412.02

Thus, even if certain broadening aspects of the reissue claims do relate to subject matter that was indeed surrendered, the examiner must still consider the narrower aspects of the claims to see if the scope of the claim results in recapture of the claims surrendered. The analysis in the rejection does not even reach this issue, finding instead that any broadening related to subject matter added to a claim during the original prosecution triggers a bar.

If the MPEP is wrong, applicants request that the PTO make that clear. Otherwise, applicants request reconsideration in view of the fact that the reissue claims are narrower than the claims cancelled during prosecution. It is beyond dispute that all of the reissue claims are limited to albumin protein, where the original claims were broader, not limited to any protein. These claims clearly cannot be seeking to recapture the subject matter of the original claims.

For the Examiner's convenience, Applicants enclose herewith Federal Reporter copies of In re Clement, In re Ball Corporation v. The United States, and Application of Richman.

Applicants submit that the recapture rule rejection should be withdrawn.


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Please apply any other charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

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petitioners' motion to dismiss and to strike counts I and II, or in the alternative, to require Ealing to be joined as an involuntary plaintiff. The district court has refused to certify the matter for interlocutory appeal pursuant to 28 U.S.C. § 1292(b).

Petitioners apparently recognize that this court currently has no jurisdiction under 28 U.S.C. § 1292(b) to review interlocutory matters, such as that presented here, even if certified, *Harrington Manufacturing Co. v. Powell Manufacturing Co.*, 709 F.2d 710 (Fed.Cir.1983), or any administrative supervisory authority over any district court under the Federal Courts Improvement Act of 1982, Pub.L. No. 97-164, 96 Stat. 25, as might justify a writ of mandamus under certain circumstances by a regional circuit court. *C.P.C. Partnership v. Nosco Plastics, Inc.*, 719 F.2d 400 (Fed.Cir. 1983).

Accordingly, petitioners are reduced to proceeding under 28 U.S.C. § 1651, the All Writs Act. Nevertheless, we decline to issue the writ sought, finding in the circumstances of this case no clear demonstration of any abuse of discretion by the district court, as in *Mississippi Chemical Corp. v. Swift Agricultural Chemicals Corp.*, 717 F.2d 1874, 219 USPQ 577 (Fed. Cir.1983), or any potential in the actions of that court complained of by petitioners to frustrate the appellate jurisdiction of this court, as was the case in *In re Snap-On Tools Corp.*, 720 F.2d 664 (Fed.Cir.1983). This result makes it unnecessary for us to reach other issues raised in the papers before this court.

IT IS THEREFORE ORDERED that the petition for writ of mandamus is *denied*.



BALL CORPORATION, Appellee.

v.

The UNITED STATES, Appellant.

Appeal No. 84-680.

United States Court of Appeals,
Federal Circuit

March 15, 1984.

Patentee brought action against the Government for alleged unauthorized use of invention. On cross motions for summary judgment, the Claims Court denied both motions. Permission was granted for the Government to take interlocutory appeal. The Court of Appeals, Edward S. Smith, Circuit Judge, held that: (1) construing liberally the term "error" in statute relating to reissue patents, patentee's deliberate cancelation of original single transmission feedline claims in patent for antenna assembly for use in missiles was sufficient error, in that it occurred without deceptive intent, to permit patentee to seek to secure, through reissue, claims narrower in scope than canceled claims in all material respects; (2) fact that the reissue claims were broader in one respect than the original claims did not bar patentee from securing reissue claims; and (8) patentee was not estopped to secure reissue claims.

Affirmed and remanded.

1. Patents \S 141(2, 3, 6, 7)

Applicability of recapture rule and sufficiency-of-error standard under statute relating to reissue patents turned, in absence of other evidence of patentee's intent in deliberately canceling original claims, on similarity between reissue and canceled claims; narrower reissue claims were allowable, whereas broader reissue claims or reissue claims of same scope as canceled claims were not. 35 U.S.C.A. § 251.

2. Patents \S 141(2, 6)

Subject matter of canceled original claims and claims presented in reissue application was not alone controlling on issue

of applicability of recapture rule and sufficiency-of-error standard. 35 U.S.C.A. § 251.

3. Patents ⇐141(2, 6)

In determining applicability of recapture rule and sufficiency-of-error standard under statute relating to reissue of patents, focus is not on specific limitations or on elements of claims, but, rather, on respective scope of canceled original claims and reissue claims. 35 U.S.C.A. § 251.

4. Patents ⇐141(2, 7)

Construing liberally the term "error" in statute relating to reissue patents, patentee's deliberate cancellation of original single transmission feedline claims in patent application for antenna assembly for use in missiles was sufficient error, in that it occurred without deceptive intent, to permit patentee to seek to secure, through reissue, claims narrower in scope than canceled claims in all material respects. 35 U.S.C.A. § 251.

See publication Words and Phrases for other judicial constructions and definitions.

5. Patents ⇐141(3)

Fact that reissue claims were broader in one respect than canceled claims was not fatal to patentee's securing the reissue claims, where patentee filed application for reissue within two-year period for broadened reissue specified in statute and broader feature related to aspect of the invention that was not material to alleged error supporting reissue. 35 U.S.C.A. § 251.

6. Patents ⇐134

Reissue is remedial in nature and is based on fundamental principles of equity and fairness. 35 U.S.C.A. § 251.

7. Patents ⇐141(6)

Recapture rule is inherently founded upon equity considerations.

1. On October 8, 1982, pursuant to this court's order of October 4, 1982, Judge Colaianni of the U.S. Claims Court entered a judgment denying both parties' motions for summary judgment,

8. Patents ⇐168(2)

Government's "file wrapper estoppel" argument against allowance of reissue claims was unavailing at stage of proceedings not fully addressing validity and infringement issues, but only resolving controlling issue of law relative to those ultimate issues. 35 U.S.C.A. § 251.

Joseph A. Hill, Washington, D.C., for appellant.

Allen Kirkpatrick, Washington, D.C., for appellee.

Before BALDWIN, BENNETT and SMITH, Circuit Judges.

EDWARD S. SMITH, Circuit Judge.

This case presents the question whether a patentee is barred by the recapture rule from securing, through reissue, claims to subject matter previously canceled from the original application. Plaintiff-appellee, Ball Corporation (Ball), brought suit against the Government in the United States Court of Claims under 28 U.S.C. § 1498(a) (1976) for unauthorized use of the invention claimed in U.S. patent No. Re. 29,296 (July 5, 1977) to Krutsinger, et al. (the Krutsinger patent). The Government moved for summary judgment and Ball filed a cross-motion for summary judgment. Both motions were denied.¹ The Government appealed denial of its motion to this court. At the time of that first appeal, the judgment of the trial judge was not final and the issues had not been certified for appeal. In view of the uncertified, interlocutory nature of the appeal at that time, this court on March 30, 1983, issued an order dismissing the appeal for lack of jurisdiction with leave to seek certification and to appeal pursuant to 28 U.S.C. § 1292(d)(2). On November 22, 1983, the trial judge certified the questions. Permission was granted on December 12, 1983, to take interlocutory appeal to this court. The Government again appeals. We con-

corresponding to his earlier report in the case, filed by him as a trial judge of the U.S. Court of Claims on August 23, 1982.

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clude that the trial judge properly denied the Government's motion for summary judgment, and we remand the case for trial.

Background

The invention covered by the Krutsinger patent relates to a dual slot antenna assembly [10] (Fig. 1) intended for use on missiles.

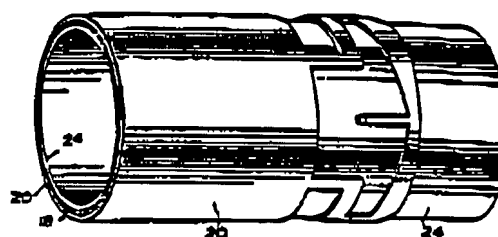


Fig. 2

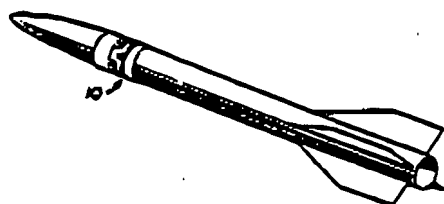


Fig. 1

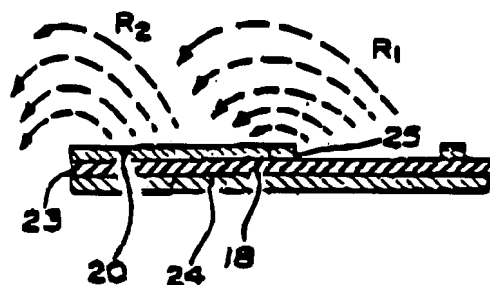


Fig. 3

The antenna (Fig. 2) consists of two thin cylindrical concentric conductors [20, 24] assembled so that they are radially spaced slightly apart to form a cavity [18]. The cavity may be void or may be filled with a dielectric material. The axial length of the conductors is substantially equal to one-half wavelength at the anticipated operating frequency of the antenna. The conductor assembly can be mounted around the outer skin of the vehicle (Fig. 1).

The circumferential edges of the cylindrical conductors define radiation slots [23, 25] (Fig. 3).

2. Previous missile antennas exhibited signal nulls that made monitoring difficult from a ground tracking station as the missile rolled or changed direction in flight. The claimed antenna exhibits a substantially isotropic radiation

pattern which overcomes this problem by eliminating signal nulls. Because the cylindrical conductors are one-half wavelength long, these radiation slots are, ipso facto, longitudinally spaced one-half wavelength apart at the anticipated operating frequency of the antenna. The radiation slots are excited by signal energy from a source and cooperate to produce an omnidirectional dipole radiation pattern.¹ Due to the one-half wavelength spacing between the radiation slots, the electromagnetic radiation emanating from the

pattern which overcomes this problem by eliminating signal nulls.

slots $[R_1, R_2]$ radiates in the same direction and overlaps in an additive manner to provide a stronger radiation pattern.

Signal energy is supplied to the antenna by a connector [70] (Fig. 4).

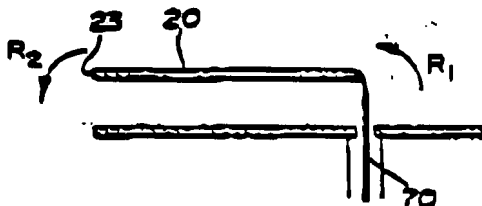


Fig. 4

In the preferred embodiment of the invention, the connection of the inner and outer cylindrical concentric conductive elements to the source is accomplished by means of a single coaxial transmission feedline. It is this feedline element around which the present controversy revolves. In particular, this case involves the number of feedlines to the outer conductor that may be properly claimed in the Krutsinger reissue patent in light of the prosecution history of the original patent application.

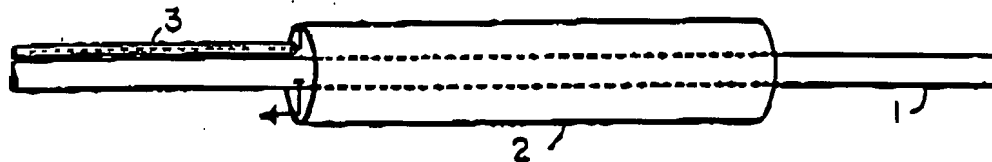


Fig. 5

Following the second office action, Ball added limitations to the claims requiring that a plurality of leads be connected to an edge of the outer conductor. These leads were recited to be spaced-apart at intervals substantially equal to one wavelength at the anticipated operating frequency of the antenna. Ball also canceled claim 7 and dependent claim 8 (the canceled claims), of the original application, which are set forth below:

7. A dual slot antenna assembly comprising: a first substantially cylindrical conductor, the axial length of which is

The Canceled Claims

Dependent claims 8 and 9 are the only claims of the original application critical to this appeal. Claim 8 includes the single feedline, whereas claim 9 does not. Claim 8 calls for "at least one" conductive lead to be connected to the edge of one of the conductors. Claim 9 requires that "a plurality of leads" be connected to the edge of one of the conductors at circumferentially spaced intervals.

In the first office action on the original application the examiner rejected claims 1-8 and indicated that claims 9 and 10 should be limited to a plurality of feedlines. The claims were amended and, on July 14, 1972, the examiner made his second rejection final. The examiner again suggested the allowability of the plurality of feedlines claims if presented in independent form. The remaining claims were rejected over the newly cited reference, Cork, U.S. patent No. 2,234,234. The Cork patent discloses a single feedline [8] (Fig. 5) and is similar in all other material respects to Krutsinger's antenna.

approximately equal to one-half wavelength at the anticipated operating frequency of said assembly; a second substantially cylindrical conductor, the axial length of which is at least equal to the axial length of said first conductor, said second conductor being positioned concentrically within and radially spaced from said first conductor so as to define a pair of circumferential slots spaced one-half wavelength apart at said anticipated operating frequency and providing independent radiation patterns emanating in the same direction; and electrical signal feed means connected with said

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conductor for electrically exciting both of said slots.

8. An assembly according to Claim 7 wherein said feed means includes at least one conductive lead which terminates connected to the edge of one of said conductors defining one of said slots. U.S. patent No. 3,810,188 (the original patent) issued on May 7, 1974, to Ball as assignee, on the basis of the original application, as amended.

Subsequently, Ball decided that it was entitled to claims broad enough to include the single feedline. On July 16, 1975, within the 2-year statutory period for broadened reissue provided in 35 U.S.C. § 251, Ball filed a reissue application. Claims 1-4 of the reissue application comprised the four claims of the original patent. New claims 5-7 were added to the reissue application. Only the new claims, 5-7, directed to the single feedline embodiment, are in issue in this proceeding.³

The Alleged Error

In support of its reissue application Ball stated that the original patent was partially inoperative because it claimed less than Ball had a right to claim. Ball identified as error the undue limitation of the claims of the original patent to a plurality of feedlines:

[T]he unwarranted limited scope of our original patent claims were errors [sic] that arose without any deceptive intention as a result of inadequate and/or ineffective communication with our former patent attorney, * * * and/or as a result of an inadequate understanding on our part of the potential effect of recitations in the original patent claim language under United States laws; * * *

U.S. patent No. Re. 29,296 issued on July 5, 1977, on the basis of the reissue application.

3. See *Haliczky v. United States*, 356 F.2d 541, 544-45, 148 USPQ 565, 568-69 (Ct.Cl.1966) (range of equivalents of original patent claims would not include canceled feature).

The Reissue Claims

Ball filed an administrative claim with the United States Navy on January 18, 1978, seeking damages and compensation for unauthorized use of, *inter alia*, the invention covered by claims 5, 6, and 7 of U.S. patent No. Re. 29,296. Claims 5, 6, and 7 of the reissue patent are set forth below:

5. A dual slot antenna assembly comprising:

a pair of laterally spaced-apart conductive elements separated with respect to one another by a sheet of dielectric material,

one of said conductive elements being of larger dimensions and underlying the other element and defining an electrical reference or ground surface;

said conductive elements defining a pair of radiation slots between opposing edges of said other element and said reference surface, said radiation slots being longitudinally spaced-apart a predetermined distance approximately equal to one-half wavelength at the anticipated operating frequency of said assembly,

each of which radiation slots emanates radiation therefrom such that the radiation patterns developed are in substantially the same direction;

said radiation slots having a length dimension equal to the entire length of said opposing edges, which length dimension is greater than the spacing between said conductive elements; and

a single electrical signal feed assembly integrally connected with said other conductive element at only one of said opposing edges for electrically exciting both of said radiation slots from a single signal feed junction.

4. See United States Patent and Trademark Office, *Manual of Patent Examining Procedure* § 1401.08 (1974) (error arising from a lack of understanding or of knowledge by applicant's attorney as to the real invention may be acceptable).

6. An assembly according to claim 5 wherein said conductive elements and said sheet of dielectric material each comprise part of a single sheet of dielectric material metallurgically clad on opposite sides thereof.

7. An antenna structure comprising:

an electrically conducting ground surface,

a single layer electrically conducting surface comprising both an r.f. radiator conducting area and an r.f. feedline conducting area integrally connected thereto and formed therewith, a dielectric sheet disposed between said ground surface and the single layer electrically conducting surface,

said conducting surfaces defining a pair of radiation slots between opposing edges of said r.f. radiator and said ground surface, said radiation slots being longitudinally spaced apart by a predetermined distance approximately equal to one-half wavelength at the anticipated operating frequency of said antenna structure; each of which radiation slots emanates radiation therefrom such that radiation patterns developed are in substantially the same direction;

said radiation slots having a length dimension equal to the entire length of said opposing edges, which length dimension is greater than the spacing between said surfaces; and

said r.f. feedline being connected to the outside edge of one only of said opposing edges of said r.f. radiation conducting area to at least one predetermined point on the periphery of

said radiator conducting area. [Emphasis in original.]

On March 25, 1981, Ball filed a petition in the United States Court of Claims under 28 U.S.C. § 1498 (1976),⁵ seeking reasonable and entire compensation for the "infringement" of claims 5, 6, and 7 of U.S. patent No. Re. 29,296. On June 29, 1981, prior to filing an answer, the Government moved for summary judgment. Ball filed a cross-motion for summary judgment.

Judge Colaianni denied both motions. As to the Government's motion, denial of which is on appeal here, the trial judge found that the undisputed evidence of record did not support the Government's arguments; as to Ball's cross-motion, the trial judge found that material issues of fact remained which compelled denial of the motion. Because we agree that neither the recapture rule nor the estoppel doctrine mandate grant of the Government's summary judgment motion, we affirm.

Issues

Two issues are raised in this appeal: (1) whether the error alleged by Ball is sufficient as a matter of law under 35 U.S.C. § 251 (1976) to support reissue; and (2) whether Ball is estopped from securing, through reissue, claims covering the single feedline feature.

The Government contends that Ball's deliberate cancellation of the single feedline claims was not error. That act was taken to avoid a prior art rejection and, in the Government's view, the recapture rule bars Ball from securing similar claims through reissue. The Government also contends

5. 28 U.S.C. § 1498 (1976), as amended by The Federal Courts Improvement Act of 1982, Pub.L. No. 97-164; 1982 U.S. CODE CONG. & AD. NEWS (96 Stat.) 25, provides, in pertinent part:

"§ 1498. Patent and copyright cases

"(a) Whenever an invention described in and covered by a patent of the United States is used or manufactured by or for the United States without license of the owner thereof or lawful right to use or manufacture the same, the owner's remedy shall be by action against the United

States in the United States Claims Court for the recovery of his reasonable and entire compensation for such use and manufacture.

"For the purposes of this section, the use or manufacture of an invention described in and covered by a patent of the United States by a contractor, a subcontractor, or any person, firm, or corporation for the Government and with the authorization or consent of the Government, shall be construed as use or manufacture for the United States."

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that the deliberate nature of Ball's acts estops Ball from securing similar claims through reissue. Ball did not appeal the denial of its summary judgment motion but, rather, defends the trial judge's opinion as correct as a matter of law. Resolution of this controversy involves a substantial body of precedent.⁶ The parties differ in their interpretation of the law and in their application of it to the facts of this case.

The Recapture Rule

Reissue is not a substitute for Patent Office appeal procedures. Reissue is an extraordinary procedure and must be adequately supported by the circumstances detailed in 35 U.S.C. § 251 (1976)⁷ and in the implementing regulations, 37 C.F.R. § 1.175 (1982). The Government asserts that the nature of error that will justify reissue is narrowly circumscribed to ensure that reissue remains the exception and not the rule. Relying on *Edward Miller & Co.*

v. Bridgeport Brass Co.,⁸ the Government contends that "a mere error of judgment" is not adequate to support reissue; rather the error must be "a real *bona fide* mistake, inadvertently committed."

The 1952 revision of the patent laws made no substantive change in the definition of error under section 251.⁹ While deliberate cancellation of a claim cannot ordinarily be considered error,¹⁰ the CCPA has repeatedly held that the deliberate cancellation of claims *may* constitute error, if it occurs without deceptive intent.¹¹ In *In re Petrow*,¹² the CCPA went so far as to state that error is sufficient where the deliberate cancellation of claims does not amount to an admission that the reissue claims were not patentable at the time the original claims were canceled. Similarly, in *In re Wesseler*,¹³ the CCPA stated that error is established where there is no evidence that the appellant intentionally omitted or abandoned the claimed subject mat-

6. The holdings of the U.S. Court of Claims and of the U.S. Court of Customs and Patent Appeals were adopted as precedent in this court in *South Corp. v. United States*, 690 F.2d 1368, 1370, 215 USPQ 657, 658 (Fed.Cir.1982). Both prior courts have ruled on the issues involved in this case. Additionally, several circuit courts have also considered the application of the recapture rule.

7. Section 251 provides in pertinent part:

"§ 251. Reissue of defective patents

"Whenever any patent is, through error without any deceptive intention, deemed wholly or partly inoperative or invalid, * * * by reason of the patentee claiming more or less than he had a right to claim in the patent, the Commissioner shall, on the surrender of such patent and the payment of the fee required by law, reissue the patent for the invention disclosed in the original patent, and in accordance with a new and amended application, for the unexpired part of the term of the original patent. * * *

"No reissued patent shall be granted enlarging the scope of the claims of the original patent unless applied for within two years from the grant of the original patent." (Emphasis supplied.)

8. *Edward Miller & Co. v. Bridgeport Brass Co.*, 104 U.S. 350, 355, 26 L.Ed. 783 (1882).
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9. *In re Wadlinger*, 496 F.2d 1200, 1206-07, 181 USPQ 826, 831-32 (Cust.Pat. & App.1974); *In re Wesseler*, 367 F.2d 838, 849, 151 USPQ 339, 347 (Cust.Pat. & App.1966); *In re Byers*, 230 F.2d 451, 454, 109 USPQ 53, 55 (Cust.Pat. & App. 1956); *Riley v. Broadway-Hale Stores, Inc.*, 217 F.2d 530, 531 n. 1, 103 USPQ 414, 415 n. 1 (9th Cir.1954). But see *In re Willingham*, 282 F.2d 353, 355, 127 USPQ 211, 214 (Cust.Pat. & App. 1960). "Error" is interpreted in the same manner as under section 64 of the old law, i.e., accident, inadvertence, or mistake.

10. *In re Petrow*, 402 F.2d 485, 487, 159 USPQ 449, 450 (Cust.Pat. & App.1968); *Willingham*, 282 F.2d at 357, 127 USPQ at 215.

11. See *Wadlinger*, 496 F.2d at 1206, 181 USPQ at 831; *Petrow*, 402 F.2d at 487, 159 USPQ at 450; *Wesseler*, 367 F.2d at 849, 151 USPQ at 348; *Willingham*, 282 F.2d at 357, 127 USPQ at 215. See also *Tee-Pak, Inc. v. St. Regis Paper Co.*, 491 F.2d 1193, 1201, 181 USPQ 75, 81 (6th Cir.1974); *Manual of Patent Examining Procedure* § 1401.08.

12. *Petrow*, 402 F.2d at 488, 159 USPQ at 451. See also *Wesseler*, 367 F.2d at 846, 151 USPQ at 344-46; *Willingham*, 282 F.2d at 357, 127 USPQ at 215-16; *Tee-Pak*, 491 F.2d at 1201, 181 USPQ at 81.

13. *Wesseler*, 367 F.2d at 850, 151 USPQ at 349. See also *Riley*, 217 F.2d at 532, 103 USPQ at 415.

ter. Thus, the CCPA has construed the term error under section 251 broadly.¹⁴

The Ninth Circuit employed a more rigid standard in *Riley v. Broadway-Hale Stores, Inc.*¹⁵ stating: "when the chief element added by reissue has been abandoned while seeking the original patent, the reissue is void." The trial judge sought to determine whether Ball had made a deliberate judgment that claims of substantially the same scope as the new reissue claims would have been unpatentable. The Government, arguing from *Riley*, submits that the trial judge's approach loses sight of the feature given up by a patentee in order to secure the original patent. We decline to adopt the rigid standard applied in *Riley*, in favor of the more liberal approach taken by the CCPA. *Petrow* clearly establishes the vitality of the standard employed by the trial judge under this court's precedent.

Further, the Government argues that we need not reach the issue of claim scope because the sufficiency of error is a threshold issue. While claim scope is no oracle on intent, the Government fails to apprehend its role. Rarely is evidence of the patentee's intent in canceling a claim presented. Thus, the court may draw inferences from changes in claim scope when other reliable evidence of the patentee's intent is not available. Claim scope is not the lodestar of reissue. Rather, the court's reliance on that indicator in the case law appears to be born of practical necessity as the only available reliable evidence.

14. *Wadlinger*, 496 F.2d at 1207-08, 181 USPQ at 832; *In re Richman*, 409 F.2d 269, 273-75, 161 USPQ 359, 362-63 (CCPA 1969); *Wesseler*, 367 F.2d at 849, 151 USPQ at 347-48; *Willingham*, 282 F.2d at 355-56, 127 USPQ at 214. *But see In re Wadsworth*, 107 F.2d 596, 43 USPQ 460 (CCPA 1939).

15. *Riley*, 217 F.2d at 532, 103 USPQ at 415.

16. *Haliczer*, 356 F.2d 541, 148 USPQ 565.

17. *Id.* at 545, 148 USPQ at 569 (bars reissue claims of same scope); *Byers*, 230 F.2d at 455-57, 109 USPQ at 56-57 (bars reissue claims that are of broader scope than canceled claims); *Wadsworth*, 107 F.2d at 599, 43 USPQ at 463 (bars reissue claims of similar scope).

The Government relies heavily on *Haliczer v. United States*,¹⁶ which also involved a suit under 28 U.S.C. § 1498. The Court of Claims in that case held the reissue claims invalid because the patentee sought to acquire through reissue the *same* claims that had earlier been canceled from the original application. The recapture rule bars the patentee from acquiring, through reissue, claims that are of the *same* or of *broader scope* than those claims that were canceled from the original application.¹⁷ On the other hand, the patentee is free to acquire, through reissue, claims that are *narrower* in scope than the canceled claims.¹⁸ If the reissue claims are narrower than the canceled claims, yet broader than the original patent claims, reissue must be sought within 2 years after grant of the original patent.

[1-3] Thus, the applicability of the recapture rule and the sufficiency of error under section 251 turn in this case, in the absence of other evidence of the patentee's intent, on the similarity between the reissue and the canceled claims. Narrower reissue claims are allowable; broader reissue claims or reissue claims of the same scope as the canceled claims are not.¹⁹ The subject matter of the claims is not alone controlling.²⁰ Similarly, the focus is not, as the Government contends, on the specific limitations or on the elements of the claims but, rather, on the *scope* of the claims.²¹

18. *Wadlinger*, 496 F.2d at 1204, 181 USPQ at 830; *Petrow*, 402 F.2d at 488, 159 USPQ at 451; *Wesseler*, 367 F.2d at 846-47, 151 USPQ at 346; *Willingham*, 282 F.2d at 356, 127 USPQ at 215.

19. If reissue is sought where claims have not been previously canceled, analysis becomes more difficult. In that case relative claim scope is not available to illuminate the alleged error. We are not faced with that situation in this proceeding.

20. *Petrow*, 402 F.2d at 488, 159 USPQ at 451.

21. *Richman*, 409 F.2d at 274-75, 161 USPQ at 362-63. *See also Wadsworth*, 107 F.2d 596, 43 USPQ 460 (analysis turns on substantiality of similarity of reissue to canceled claims).

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Cite as 729 F.2d 1429 (1984)

Ball's Reissue Claims

[4] The trial judge required the Government to establish that the applicant has made a deliberate decision that the canceled claims are unpatentable. The Government argues that that standard is not correct because it loses sight of the *feature* that the patentee gave up during prosecution of the original application. We find the Government's argument entirely unpersuasive. The proper focus is on the *scope* of the claims, not on the individual *feature* or *element* purportedly given up during prosecution of the original application. The trial judge quite properly focused on the scope of the claims and we find no error in this respect. He determined that the reissue claims were intermediate in scope—broader than the claims of the original patent yet narrower than the canceled claims.

The alleged inadequacy of Ball's proffered error is not as clear as the Government contends. The error supporting reissue submitted by Ball comports with the statute and regulations. Further, we fail to perceive the "inconsistency" of Ball's position as asserted by the Government.

The canceled claims, claims 7 and 8,²² define the invention quite broadly. Canceled claim 8 requires feed means including at least one conductive lead. The reissue claims,²³ in contrast, include limitations not present in the canceled claims: the cavity is filled with a dielectric material; and an electrical signal feed assembly replaces the feed means of the canceled claims. The electrical signal feed assembly (Fig. 6) is a network of leads with a single coaxial feedline to that network. The network consists of a plurality of thin ribbon-like conductive leads.

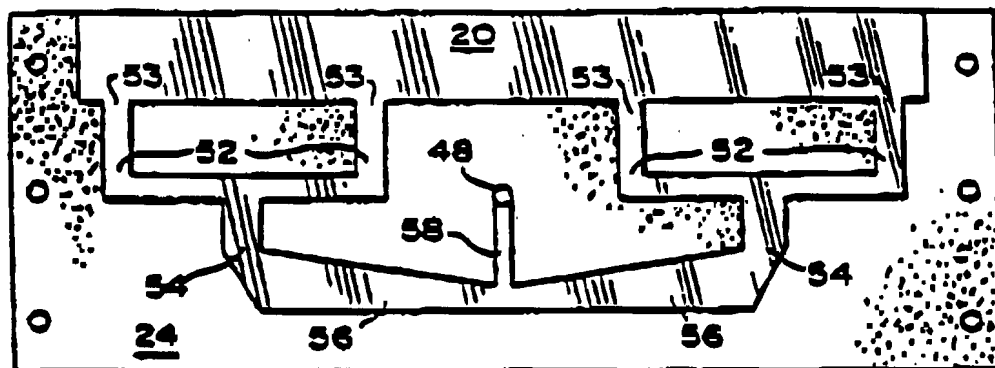


Fig. 6

Feed points [58] to the outer conductor are one wavelength apart at the anticipated operating frequency of the antenna. The leads of this network [52, 54, 56, 58] are dimensioned to provide continuous impedance matching between the cavity and the single coaxial feedline [70], which feeds into the assembly at the aperture [48]. The signal feed assembly is more limited

than the "at least one" feed means limitation of canceled claim 8.

[5] The reissue claims are, however, broader in one respect. The canceled claims are limited to an antenna of cylindrical configuration, whereas the reissue claims are not so limited. We are aware of the principle that a claim that is broader in any respect is considered to be broader

22. See *supra* "The Canceled Claims."

23. See *supra* "The Reissue Claims."

Pursuant to section 251, broadened reissue must be sought within 2 years after issuance of the original patent. The CCPA, in *In re Rogoff*,²⁵ noted that section 251

contains no exceptions or qualifications as to time or extent of enlargement. The sole issue, therefore, is whether the claims on appeal enlarge, i.e., broaden, the patent claim.

It is well settled that a claim is broadened, so far as the question of right to reissue is concerned, if it is so changed as to bring within its scope any structure which was not within the scope of the original claim. In other words, a claim is broadened if it is broader in any respect than the original claim, even though it may be narrowed in other respects. . .

Thus, the principle that a claim is broadened if it is broader in any respect than the original claim serves to effect the bar of section 251 against reissue filed later than 2 years after issuance of the original patent. In this case, Ball filed its application for reissue within the 2-year period for broadened reissue specified in section 251.

We know of no authority applying the above rule to reissue claims relative to the scope of canceled claims within the 2-year period for broadened reissue. Nor do we perceive the wisdom of such extension in this case. The rule is rigid and properly so in that it effects an express statutory limitation on broadened reissue. The recapture rule, however, is based on equitable principles. The rigidity of the broader-in-any-respect rule makes it inappropriate in the estoppel situation presented in this appeal.

re Price, 302 F.2d 741, 741-42, 133 USPQ 527, 528 (Cust. & Pat.App.1962) (3 years after issue); *In re Ruth*, 278 F.2d 729, 730, 126 USPQ 155, 156 (Cust. & Pat.App.1960) (4 years after issue).

25. *In re Rogoff*, 261 F.2d 601, 603-04, 120 USPQ 185, 186 (Cust. & Pat.App.1958).

Hence, we decline to apply that rule here, where the broader feature relates to an aspect of the invention that is not material to the alleged error supporting reissue. In *Willingham*, the CCPA reversed the rejection of a claim that was narrower than the canceled claim as to one element, although broader as to another element. "The extent to which [deliberate cancellation of a claim from the original application] may also prevent [a patentee] from obtaining other claims differing in form or substance from that cancelled necessarily depends upon the facts in each case and particularly on the reasons for the cancellation."²⁶ Accordingly, we hold that the reissue claims are not substantially identical in scope to the canceled claims.

As noted *supra*, there is widespread agreement that reissue claims that are narrower than the canceled claims are allowable. In *In re Wadlinger*,²⁷ the CCPA faced a situation in which the reissue claims were, as the trial judge found here, of "different" scope from the canceled claims. While both the reissue and canceled claims were directed to the same process in *Wadlinger*, the canceled claims were considered broader, resulting in claims of different scope. The reissue claims were held valid. Similarly, we find that the non-material, broader aspects of Ball's reissue claims do not deprive them of their fundamental narrowness of scope relative to the canceled claims. Thus, the reissue claims are sufficiently narrower than the canceled claims to avoid the effect of the recapture rule.

Estoppel

[6.7] The Government also argues that Ball is estopped to secure the reissue claims. We do not consider this argument as stating an independent ground for relief.

26. *Willingham*, 282 F.2d at 357, 127 USPQ at 215.

27. *Wadlinger*, 496 F.2d at 1205-06, 181 USPQ at 830-31.

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The recapture rule is a creature of equity and it embodies the estoppel notions which the Government now urges upon us.²⁸ We have already resolved this issue against the Government.

[8] We agree with the patentee that the Government's "file wrapper estoppel" argument is equally unavailing. The doctrine of estoppel based on the prosecution history is a corollary to the doctrine of equivalents, a tool in the analysis of infringement. The parties are before this court purely on a controlling issue of law relative to the validity of the reissue claims being asserted by Ball. There has not yet been a full trial on the issue of infringement, let alone on the validity of the reissue claims.²⁹ The Government's estoppel argument does no more than restate the basic equitable principles underlying the recapture rule.

28. Reissue is remedial in nature and is based on fundamental principles of equity and fairness. The recapture rule is inherently founded on similar considerations of equity, providing guidance in the application of the law governing reissue. See *Wesseler*, 367 F.2d at 848, 151 USPQ at 347; *Willingham*, 282 F.2d at 354-55, 127 USPQ at 214.

29. The Government apparently misconstrues *Haliczer* in this respect. In *Haliczer*, the court determined that the doctrine of equivalents would require that the original claims, carried

Conclusion

The trial judge properly articulated the law governing reissue. While broader in scope than the original claims, the reissue claims are narrower in scope than the canceled claims. The error supporting reissue appears to be sufficient. On the basis of the facts before us and the reasons given for the cancellation of the claims from the original application, we cannot find, as a matter of law, that Ball is barred from securing reissue claims drawn to the single feedline embodiment of its invention. The case is remanded to the Claims Court for further proceedings consistent with this opinion.

AFFIRMED AND REMANDED.



over into the reissue patent, would not be entitled to the range of equivalents that were purposely surrendered during prosecution of the original patent. This is based on an estoppel notion born of the inconsistency of arguing that the original claims cover that which was given up during the prosecution of the original patent. The reissue claims, not the original claims, are in issue here and the Government's reasoning is, therefore, inapposite. There is no inconsistency in arguing the broadened scope of the reissue claims and, thus, no estoppel.

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Schwester discloses a soft plastic bundling strap for electrical cables. In the words of the examiner:

* * * Schwester et al. clearly suggests, in a securing device, employing a plastic, Nylon for example, to be pierced by a pointed securing element, * * *

The examiner rejected the claims as unpatentable over Denney in view of Sturtevant when considered with Schwester. It was the examiner's position that appellant's claims were readable on the Denney seal except for the limitation relating to the embedding of the hook and that it would be obvious to one skilled in the art to modify the Denney seal to permit embedding of the hook in soft material as shown by Sturtevant. Schwester was regarded as further evidence of the obviousness of using a soft plastic for that purpose.

Affirming the rejection of the claims, the board stated:

In view of the teachings of the Sturtevant patent, we consider the extent of penetration of Denney's hook terminals into the housing a matter of degree, depending on the relative hardness of the shackle and housing materials. With the development of plastic materials as we know it today, one has much to choose from in making a housing of brittle or relatively pliable plastic material. This is exemplified by the disclosure of the Schwester et al. patent.

Here appellant's main contention is that the teachings of the Sturtevant patent are insufficient taken in combination with Denney to overcome the fact that in Denney the hook does not become embedded in the housing. It is appellant's position that the material of Sturtevant's housing is not such that embedding of the hook occurs. Although we have carefully reviewed appellant's arguments on that point, the fact remains that they are flatly contradicted by the previously quoted and quite explicit statement in Sturtevant that the hook "embeds itself in the soft material of the tag." [Emphasis added.]

Thus we agree with the board that making Denney's housing of a suitably soft material, such as common plastics, would be obvious in view of Sturtevant's teaching of using a soft housing material to permit embedding of a hook member of a seal. That the soft material to be used could be a plastic seems almost self evident in light of the almost universal use of plastics in modern technology, although the examiner's citation of Schwester provides an explicit teaching if one were needed.

The decision is affirmed.

Affirmed.



AS CCPA

Application of Donald RICHMAN.

Patent Appeal No. 8187.

United States Court of Customs
and Patent Appeals.

April 17, 1969.

Proceeding in the matter of application, serial No. 223,581, for reissue of patent No. 2,954,425 for "Phase Detector and Color Killer" for color television sets. The Patent Office Board of Appeals affirmed examiner's rejection of claims 23-28 and the applicant appealed. The United States Court of Customs and Patent Appeals, Rich, Acting C. J., held that each of claims 23-28 of application for reissue patent on "Phase Detector and Color Killer" for color television sets was more restrictive than cancelled claims 1-15 of original patent and applicant did not intend to settle for less protection than he was entitled to or to omit or abandon subject matter of claims, applicant's failure to present claims of adequate scope was "error without any deceptive intention" within terms of reissue statute and applicant was not estopped from obtaining rejected claims by

reason of his action in prosecution of his original application.

Reversed.

1. Patents \S 136

Statute respecting reissue of patent for invention disclosed in original patent when any patent is through "error" deemed invalid by defective specification or drawing or because patentee claimed more or less than he had right to claim does not limit "error" to that which has arisen through inadvertence, accident or mistake and "error" is to be interpreted as Congress stated it, "error without any deceptive intention". 35 U.S.C.A. \S 251.

2. Patents \S 140

Record in proceeding for reissue of patent for "phase detector and color killer" for color television sets established that applicant was not seeking in claims 23-28 to recapture same subject matter that he sought in cancelled claims 1-15 of original patent. 35 U.S.C.A. \S 251.

3. Patents \S 136

Each of claims 23-28 of application for reissue patent on "phase detector and color killer" for color television sets was more restrictive than cancelled claims 1-15 of original patent and applicant did not intend to settle for less protection than he was entitled to or to omit or abandon subject matter of claims, applicant's failure to present claims of adequate scope was "error without any deceptive intention" within terms of reissue statute and applicant was not estopped from obtaining rejected claims by reason of his actions in prosecution of his original application. 35 U.S.C.A. \S 251.

1. Friedman and Kreek, Examiners-in-Chief, and Burns, Acting Examiner-in-Chief, *as stated by Friedman*.

2. \S 251. Reissue of defective patents [First paragraph.]

Whenever any patent is, through error without any deceptive intention, deemed wholly or partly inoperative or invalid, by reason of a defective specification or drawing, or by reason of the patentee claiming more or less than he

4. Patents \S 140

Record in proceeding for reissue of patent for "phase detector and color killer" for color television sets established that claims 25 and 28 defined invention different from invention defined by claim 8 of applicant's copending patent for "Highly Noise-Immune Synchronizing System" and that no double patenting would result by reissue. 35 U.S.C.A. \S 251.

Laurence B. Dodds, Great Neck, N. Y. (Jesse C. Bowyer, Washington, D. C., of counsel), for appellant.

Joseph Schimmel, Washington, D. C. (Jere W. Sears, Washington, D. C., of counsel), for Commissioner of Patents.

Before RICH, Acting Chief Judge, and ALMOND and BALDWIN, Judges.

RICH, Acting Chief Judge.

This appeal is from the decision of the Patent Office Board of Appeals¹ affirming the rejection of claims 23-28 of appellant's application Ser. No. 223,581, filed September 10, 1962, for reissue of his patent No. 2,954,425, granted September 27, 1960, on an application filed July 15, 1958, for "Phase Detector and Color Killer."

There are two issues involved. The first issue is whether appellant is entitled to relief under the reissue statute, 35 U.S.C. \S 251,² or, more specifically, whether he is estopped, under case law, from obtaining the rejected claims by reason of action he took in the prosecution of his original application to obtain the patent for which reissue is sought. The second issue is whether allowance

had a right to claim in the patent, the Commissioner shall, on the surrender of such patent and the payment of the fee required by law, reissue the patent for the invention disclosed in the original patent, and in accordance with a new and amended application, for the unexpired part of the term of the original patent. No new matter shall be introduced into the application for reissue. [Emphasis added.]

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of claims 25 and 28 would result in double patenting in view of appellant's patent No. 2,848,537, granted August 19, 1958, on an application filed December 31, 1952, for "Highly Noise-Immune Synchronizing System" (herein called the '537 patent). Both patents issued to the assignee, Hazeltine Research, Inc., which has assented to this application for re-issue.

The Invention

The invention relates to control systems for "compatible" color television receivers, that is, those which will receive either monochrome (black-and-white) or color television transmissions.

A color television broadcast signal comprises a complete brightness or monochrome signal modulated on a high-frequency carrier wave and two color-component signals which are phase and amplitude modulated on a lower frequency subcarrier wave, which wave in turn is also modulated on the main carrier wave. In the receiver, the brightness signal is demodulated and amplified for application to the brightness control element of the color tube either to produce a monochrome picture when no color signals are being broadcast or to control the brightness of the picture when color signals are being broadcast. The two color-component signals are derived from the received signal in a particular phase relationship and then translated into signals representative of the three primary colors, i. e., red, green and blue, which signals may be applied to corresponding cathodes in the color tube, producing the colors in the picture.

To permit such derivation of the necessary color signals, there is periodically interspersed with the picture signals a color-synchronizing signal comprising short bursts of a relatively few cycles of the unmodulated color subcarrier wave. In the receiver, this so-called synchronizing signal is utilized to control a color reference signal generator to maintain it in synchronism with the transmitted signal. The reference generator produces two reference signals in quadrature, or

ninety-degree phase relationship, one of which is desirably in quadrature phase with the synchronizing signal. Those two reference signals are combined with the received color-component signals in a color-difference signal detector to produce the necessary signals for application, through a color combining system, to the color picture tube.

Only when the reference generator signals are in synchronism with the received synchronizing signal will the received color signals be processed in the proper phase relationship to reproduce correctly the colors in the picture. To maintain the reference generator in such synchronism, means are provided to automatically return the reference generator to the desired condition whenever minor variations occur. Thus, appellant provides a first phase-detector circuit which compares the phase of the received synchronizing signal with that generator output signal which is desirably in quadrature phase with it. When the desired quadrature phase condition exists, the phase-detector output signal is zero. Variations of the generator output signal from the exact quadrature phase condition which take place during in-synchronism operation result in the phase detector providing an output voltage and that voltage is applied to a reactance circuit connected to the reference generator in a manner to adjust its frequency in such direction as to restore the desired phase condition.

The application discloses two improvements on the conventional apparatus so far described. First, it provides a system for deactivating the color signal channel of the receiver when a monochrome broadcast is being received instead of a color broadcast. Such a circuit, called a "color killer" circuit, prevents unwanted signals, which would otherwise be translated through the color channels, from reaching the picture tube and there producing a deleterious effect on the monochrome picture being produced at that time.

The second improvement is directed to the circumstance that the previously-

mentioned synchronizing circuit for the color reference generator responds only to limited variations from precise synchronism. That characteristic is desirable during in-synchronism operation when a color picture is being produced since it avoids false responses that might be caused by spurious signals which tend to occur, i. e., "noise" signals. However, it prevents the system from automatically reestablishing in-synchronism conditions when larger phase variations occur, as when a new channel is being tuned in. To overcome that difficulty, appellant provides means, operative when the out-of-phase condition of the reference generator exceeds the synchronizing circuit's normal range, to increase both the effective pull-in range and the rate of pull-in. Such operation is known as "two mode synchronization."

To provide the aforementioned features, appellant provides a second phase-detector circuit which responds to the relationship of the synchronizing signal and the second output signal of the generator, that is, the one which is desirably in phase with the synchronizing signal. This second phase detector provides an output voltage which is of a maximum amplitude when the compared signals are in the desired phase relationship but is of a lesser value, such as substantially zero, when the two signals are out of phase by an excessive amount and also when no color-synchronizing signal is received. The maximum signal resulting from satisfactory color-reproducing conditions operates a circuit to maintain in operation an amplifier supplying the color component signals to the color-difference signal detector. If a color-synchronizing signal is not received, the output of the second phase detector falls to substantially zero and the amplifier for the color-difference signals is thereby disabled or rendered inoperative to transmit such signals. The signal output from the second phase detector will likewise drop from its maximum value to substantially zero when a color-synchronizing signal is being received if the reference generator is so far out of synchronism

that the regular synchronizing circuit does not provide an adequate control signal to bring the reference generator back into synchronism. In one form of appellant's invention, the amplifier for the color-component signals provides, when disabled, a signal which increases the gain or amplification of two amplifiers which amplify the respective input signals to the phase-detector circuits. That action increases the amplitude of the output of the first phase detector to increase the range over which the normal synchronizing circuit is effective to restore synchronism. Upon synchronism being restored, the output of the second phase detector returns to its maximum amplitude so that the amplifier is again enabled to translate the color-difference signals. Also, the gains of the amplifiers for the input signals to the phase detectors are reduced to their normal lower values whereby the synchronization control circuit returns to normal operation to adjust for minor phase disturbances in the usual manner.

Appellant points out in his brief that the use of a signal which is "unique" for both the condition that no color-synchronizing signal is present (monochrome reception) and the condition that the reference generator is too far out of synchronism to be operative to produce a satisfactory color picture permits his arrangement to operate as a "fail-safe" circuit which "enables the color-signal-translating circuit of the receiver *only* when the set can operate properly to reproduce a color program."

The Claims

Claims 23 and 25 are representative of the appealed claims and read:

23. A control apparatus for compatible color television receiver wherein it desired automatically to switch off the apparatus for translating color signals when no color signals are being received and to turn on such apparatus when color signals are being received comprising: means for supplying a composite video frequency signal including color signals and a color syn-

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chronizing signal; means for translating said color signals; means including a color reference signal generator for generating reference oscillations in synchronism with said synchronizing signal at a desired phase relation thereto; means including a phase detector responsive jointly to said synchronizing signal and to said reference oscillations for producing a control signal indicative of the in-phase component between said synchronizing signal and reference oscillations and having one value when said synchronizing signal and oscillations are in synchronism at said desired phase relation and another value when said synchronizing signal is absent; and means responsive to said control signal for enabling translation of said color signals when said synchronizing signal and oscillations are in such synchronism at said desired phase relation thereto and for disabling said translation when said synchronizing signal is absent.

25. A synchronizing system which is highly stable in the presence of noise signals comprising: means for supplying a synchronizing signal liable to accompanying noise signals; a generator for generating oscillations in synchronism with said synchronizing signal at a desired phase relation thereto but which may be undesirably out of such synchronism; synchronizing means for normally maintaining said oscillations in such synchronism at said desired phase relation with said synchronizing signal including means for confining the response of said synchronizing means to noise signals during in-synchronism operation to a narrow pass band of frequencies, whereby its pull-in performance from out-of-synchronism is unsatisfactory; means including a phase detector responsive

jointly to said synchronizing signal and to said oscillations for producing a control signal indicative of the in-phase component between said synchronizing signal and oscillations and having one value when said signals are in such synchronism at said desired phase relation and another value both when said synchronizing signal is absent and when it is present but is out of such synchronism with said oscillations; and means responsive to said control signal for conditioning said synchronizing means for synchronism and for said response when operating in such synchronism.

Claims 24, 26 and 27, like claim 23, recite a circuit which provides color killing. Claims 24 and 27, like claim 25, define the circuit including the second phase detector as providing a signal that has "another" value both when the synchronizing signal is absent and when it is present but out of synchronism with the reference generator oscillations. Claim 28 recites two mode synchronization, as does claim 25, and also describes the output signal from the second detector means in the same manner as claim 25.

The Reissue Question

[1] The examiner rejected claims 23-28 as not supported by a sufficient reissue oath and on grounds that the errors attempted to be corrected "are not of the type contemplated by 35 USC 251, i. e. not errors arising out of inadvertence, accident, or mistake."³ The board disagreed with the former ground of rejection. As to the latter ground of rejection, the examiner stated in his Answer:

* * * it would appear that instant claims 23-28, as amended, are of the same scope as cancelled claims 1-15 of the original patent. Failure, however, to include in the patented claims the

3. The phrase "inadvertence, accident, or mistake" does not appear in 35 U.S.C. § 251 but is derived from the patent statutes in force prior to the 1952 Act, 35 U.S.C. § 64, Sec. 4916 R.S. We pointed out in *In re Wesseler*, 367 F.2d 838, 54 CCPA 785, that the term "error," as set out in 35 U.S.C. § 251, "is to be interpreted

ed as Congress has stated it, 'error without any deceptive intention,' and in light to Supreme Court decisions favoring the liberal construction of reissue statutes in order to secure to inventors protection for what they have actually invented." See also, *In re Willingham*, 282 F.2d 363, 48 CCPA 727.

subject matter of deliberately cancelled claims 1-15 would not appear to be a correctable error within the meaning of 35 USC 251.

The examiner continued:

More specifically, in cancelled claims 1-15, for example see claims 7 and 8, appellant recites only broadly that the control signal developed there is a "unidirectional control signal * * *". This latter limitation does not specify the polarity of [sic] the magnitude of the control signal as contained in the patented claims, which consequently would have covered systems in which only a change in the level of this control signal is necessary for the performance of the invention and which coverage appellant is now seeking. Appellant was well aware of the coverage afforded by this limitation. As evident from appellant's remarks in original Paper No. 5, page 7, first full paragraph, appellant perceived that other polarity relationships could be employed to derive the benefits of his invention and that claims of the scope of cancelled claims 1-15 would be adequate to cover them. It would appear from this deliberate cancellation of claims 1-15 that appellant made, at best, an error in judgment. An error of judgment in limiting the claims is not correctable by reissue. See In [re] Wadsworth et al., 1940 C.D. 73 [107 F.2d 596, 27 CCPA 735, (1939)].

The second ground of rejection was restated by the board as follows:

The Examiner's second reason for the rejection, as we understand the same as now presented, appears to be based upon an estoppel proposition, to the effect that by describing the control signals in claims 23 through 28 as involving control signals merely of different values appellant is attempting to recapture subject matter deliberately cancelled by the cancellation of original claims 1 through 15 in the application resulting in the patent.

That rejection was affirmed by the board which stated that it agreed "par-

ticularly" with the reasons given in the second quotation above from the examiner's Answer. The board further commented that the subject matter of claims 25 and 28 "would appear to find analogous correspondence in at least cancelled claim 14."

The solicitor says the question raised by this rejection may be stated as follows:

May appellant, having deliberately included a certain limitation in each of his patent claims and successfully urged the patentability thereof over prior art applied against replaced original claims 1-15 on the basis of a maximum-zero control signal relationship broadly represented by the limitation, now omit that limitation in reissue claims 23-28?

We do not consider this to be an accurate statement. The rejection which the board affirmed is grounded on the proposition that the appealed claims are directed to the same subject matter as cancelled claims 1-15 and that appellant is estopped to "recapture" that subject matter by reissue. The question raised is whether the appealed claims are of the same scope as the cancelled claims, not whether they lack some specific recitation absent from the cancelled claims but included in the patent claims.

In support of his position, the solicitor points out that this court, in *In re Wesseler* (supra, footnote 3), stated that *Shepard v. Carrigan*, 116 U.S. 598, 6 S.Ct. 493, 29 L.Ed. 723 (1886), "may be support for the rule that one who deliberately adds a limitation to avoid the prior art cannot omit that limitation in reissue claims so as to encroach upon the prior art * * *". Referring back to *Shepard*, however, it is apparent that the situation there was one in which the omission of the added limitation would have resulted in the claim being drawn to the same subject matter as the original rejected claim, to which the limitation was added, thus making it unpatentable over the prior art for the same reason as the original claim. (We therefore find neither decision to be authority for

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Cite as 409 F.2d 269 (1969)

the proposition that a limitation added to a claim in obtaining its allowance cannot be broadened, under present statutory law, by reissue if the limitation turns out to be more restrictive than the prior art required. Certainly one might err without deceptive intention in adding a particular limitation where a less specific limitation regarding the same feature, or an added limitation relative to another element, would have been sufficient to render the claims patentable over the prior art.

The solicitor's interpretation of the issue also departs from the examiner's position that the appealed claims "are of the same scope" as the cancelled claims and the board's view that appellant is trying to "recapture subject matter deliberately cancelled." Moreover, the *Wadsworth* case, cited by the examiner in his Answer, in that portion "particularly" approved by the board, turned on a comparison of the scope of the claims sought by reissue with the scope of the cancelled claims rather than on the omission of a particular limitation added in the claims of the original patent.

Turning to the present claims, the examiner, the board, and the solicitor limit their consideration to the terms in which is couched the definition of the control signal which provides the color killing and two mode synchronization.⁴ Considering that aspect of the claims, each of appealed claims 24, 25, 27, and 28 requires that the control signal in question have one value when the reference generator output is in synchronism with the synchronizing signal at the desired phase relation and "another value" both when the synchronizing signal is absent and when it is present but out of synchronism with the reference generator oscillations. That recitation is significantly more limited than the description of the corresponding signal in cancelled

claims 1-15, typically (in claim 8) as "a unidirectional control signal representative of the phase relation of * * * [the] generated signal and * * * [the] synchronizing signal." The appealed claim recitation sets forth that feature which appellant points out as permitting "fail safe" operation enabling the color signal translating circuit only when the receiver can operate properly to reproduce a color program.

Claims 23 and 26 characterize the signal in question as "having one value when said synchronizing signal and oscillations [of the reference signal generator] are in synchronism at said desired phase relation and another value when said synchronizing signal is absent." The corresponding recitation in cancelled claim 7 is "a unidirectional control signal of maximum magnitude when said first signal [reference generator signal] and said synchronizing signal are in phase" and, in cancelled claims 8 and 14, "a unidirectional control signal representative of the phase relation of said other generated [or developed] signal and said synchronizing signal." Thus, appealed claims 23 and 26 define the control signal in terms of conditions at synchronism on the one hand and absence of a synchronizing signal on the other. In contrast, the cancelled claims compared therewith define the signal in terms of the phase relationship between the generated reference signal and the synchronizing signal without any reference to the absence of the latter signal.

Moreover, another recitation in claims 23 and 26, closely related to the description of the control signal, is plainly more restrictive than corresponding recitations in the cancelled claims. Thus, claims 23 and 26 recite:

* * * means responsive to said control signal for enabling translation of said color signals when said synchro-

because they were not discussed below. We need not rule whether all those differences can properly be considered now because we find the appeal can be determined on the basis of matters which clearly are appropriate for our consideration.

4. In his brief here, appellant points to a number of differences between certain of his claims and the cancelled claims involving other aspects of the combinations claimed and the solicitor urges that those differences should not be assessed by us

nizing signal and oscillations are in such synchronism at said desired phase relation thereto and for disabling said translation when said synchronizing signal is absent.

Cancelled claim 8, which is more specific than claim 7 in this respect, recites "a circuit for applying said unidirectional signal to said signal-translating channel to control the conductivity thereof" and thus does not specify "enabling" and "disabling" of translation of the color signal when designated conditions prevail. The corresponding recitation in cancelled claim 14, referred to by the board, likewise recites the operation of the circuit responsive to the unidirectional control signal in terms of "controlling the conductivity" of the translating channel rather than the more specific expressions regarding "enabling" and "disabling."

[2,3] It is thus apparent that each of the appealed claims is more restrictive in at least one significant respect than the cancelled claims and that appellant is not seeking, through the presentation of claims 23-28, to recapture the same subject matter that he sought in cancelled claims 1-15. We find no basis for estoppel. Neither do we find any evidence that appellant intended to settle for less protection than he was entitled to or to omit or abandon the subject matter he seeks here. We do find, as in *Wesseler*, that "while appellant acted 'deliberately', he did so in error." The error, so far as the facts of record are concerned, can only be regarded as "error without any deceptive intention" within the terms of 35 U.S.C. § 251. The board's decision affirming the examiner's rejection of claims 23-28 on statutory or estoppel grounds is therefore reversed.

The Double Patenting Rejection

[4] This rejection was stated by the examiner as grounded on claims 25 and

5. Appellant's oath states that the "errors" which are relied upon are "the failure to present claims of adequate scope and,

28 "failing to distinguish over the invention claimed by appellant" in his copending '537 patent.

That patent discloses a color television receiver which, like that of the reissue application, incorporates synchronizing means including a first phase-detector circuit for maintaining a color reference signal generator in synchronism with a color synchronizing signal originating in the transmitter. The receiver also comprises an auxiliary control system including a second phase detector responsive to the synchronizing signal and reference generator oscillations at a different phase relationship than the first phase detector to produce different control effects for in-synchronism and out-of-synchronism operation and circuit means responsive to those control effects to modify the operation of the synchronizing means when the reference signal generator is out of synchronism to improve the pull-in performance. The particular circuit which improves such performance is different from the two-mode synchronization circuit of the reissue application and color killing is not provided.

The examiner, and the board in affirming, relied on a comparison of '537 patent claim 3 and appealed claim 25. Appellant accepts that comparison as determinative and narrows the issue further to a comparison of a single portion of each claim.

Patent '537 claim 3, with the significant portion emphasized, reads:

3. A highly noise-immune synchronizing system for a television receiver comprising: means for supplying a synchronizing signal liable to accompanying noise signals; a generator for generating oscillations desirably in synchronism with said synchronizing signal but which may be undesirably out-of-synchronism; synchronizing means for normally maintaining said oscillations in-synchronism and at a desired phase relation with said syn-

particularly, the failure to present claims of the scope of claims 23-28, inclusive, of the reissue application."

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chronizing signal including means for confining the response of said synchronizing means to noise signals during in-synchronism operation to a narrow pass band of frequencies, whereby its pull-in performance from out-of-synchronism operation is unsatisfactory;

an auxiliary control system including a phase detector responsive jointly to said oscillations and said synchronizing signal at a phase relation differing from said desired phase relation and substantially unresponsive to noise signals for producing different control effects for out-of-synchronism operation and in-synchronism operation; and circuit means for utilizing said control effects for modifying the out-of-synchronism operation of said synchronizing means in such a way that the pull-in performance from out-of-synchronism operation is substantially improved.

The portion of claim 25 (set forth in full above) relied on by appellant as distinguishing from the emphasized part of patent claim 3 is as follows:

* * * means including a phase detector responsive jointly to said synchronizing signal and to said oscillations for producing a control signal indicative of the in-phase component between said synchronizing signal and oscillations and having one value when said signals are in such synchronism at said desired phase relation and another value both when said synchronizing signal is absent and when it is present but is out of such synchronism with said oscillations;

The examiner conceded that there are differences in the disclosures of the '537 patent and the present application. However, he stated that "the only differences" in the critical parts of the claims are that the limitation in the patent claims "calls for the means including the phase detector to produce 'different control effects' for out-of-synchronism operation and in-synchronism whereas claim 25 of the instant case calls for the means including the phase detector to

produce a control signal 'having one value' when in in-synchronism operation and 'another value' when they are out-of-synchronism." He held that "Such differences do not patentably distinguish the two inventions, but on the contrary define the same invention in a slightly different way."

In affirming the rejection, the board noted that the phase detectors of both disclosures provide different outputs when the reference generator is off frequency than when it is in synchronism and stated that "Neither claim brings out what the difference in these signals may be, if any." Further stating that both claims require that the "difference in output be used in a control system for pulling the oscillator back into synchronism" and that "Neither claim gives any details as to the system," the board concluded that "the claims do not define specifically different devices."

However, both the examiner and the board overlooked the fact that claim 25 includes the requirement, discussed above in connection with the reissue question, that the phase detector produce a signal that has a second or "another" value both when there is no synchronizing signal and when the out-of-synchronism condition exists with a synchronizing signal being received. That characteristic of the control circuit of the present reissue application may be utilized to provide color killing in addition to the two mode synchronization provided in the circuit of the '537 patent. Claim 25 and claim 28, which includes the same limitation, thus define an invention different from the invention defined by claim 3 of the '537 patent.

Neither the examiner nor the board took the position that claims 25 and 28 are unpatentable because the difference between what they define and what is claimed in appellant's '537 patent would have been obvious to those of ordinary skill in the art. Certainly, they have advanced no reason why that might be the case. Accordingly, no question of obviousness arises and our determination that these two appealed claims define

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an invention different from that claimed in the '37 patent requires that the double patenting rejection also be reversed.

The decision of the board is reversed.
Reversed.



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Application of Michael A. BRETSCH.

Patent Appeal No. 8115.

United States Court of Customs
and Patent Appeals.

April 17, 1969.

Proceeding in matter of application for a patent. The Board of Appeals of the United States Patent Office, Serial No. 359,208 affirmed the decision of the examiner rejecting claims as unpatentable and applicant appealed. The United States Court of Customs and Patent Appeals, Worley, C. J., held that claims 9-11 of application for patent relating to spark plug adapted for use at high indicated mean effective pressures and over wide temperature ranges without gas leakage and to method of making the plug were properly rejected on ground of obviousness.

Affirmed.

1. Appearing in application serial No. 359,208, filed April 18, 1964 and entitled "Spark Plug and Method." In his brief, appellant has withdrawn the appeal as to claims 1-8.
2. U. S. Patent 1,609,735 issued December 7, 1926.
3. U. S. Patent 2,020,987 issued November 12, 1935.
4. The specification states:
Spark plugs are conventionally rated according to the indicated mean effective

Patents 6-18

Claims 9-11 of application for patent relating to spark plug adapted for use at high indicated mean effective pressures and over wide temperature ranges without gas leakage and to method of making the plug were properly rejected on ground of obviousness. 35 U.S.C.A. § 103.

Owen & Owen, Toledo, Ohio, attorneys of record, for appellant. John C. Purdue, Toledo, Ohio, Vincent L. Barker, Jr., Toledo, Ohio, of counsel.

Joseph Schimmel, Washington, D. C., for the Commissioner of Patents. Joseph Nakamura, Washington, D. C., of counsel.

Before WORLEY, Chief Judge, and RICH, ALMOND and BALDWIN, Judges.

WORLEY, Chief Judge.

The issue here is whether the Board of Appeals committed reversible error in affirming the examiner's rejection of claims 9-11¹ under 35 U.S.C. § 103 as obvious in view of Rabezzana² considered with Rohde.³

The invention relates to a spark plug adapted for use at high indicated mean effective pressures⁴ and over wide temperature ranges without gas leakage, and to a method of making the plug. Claim 11, to which we have added numericals corresponding to elements in the application drawings reproduced below, is representative:

11. A spark plug for an internal combustion engine, comprising, in

tive pressure (IMEP) in a cylinder of an internal combustion engine at which the plug starts to cause preignition. This is determined by installing a spark plug in an internal combustion engine using the spark plug to ignite the gases in the combustion chamber of the engine. The pressure of the gases in the combustion chamber is gradually increased until preignition occurs. The indicated mean effective pressure is noted at which preignition first occurs and this is the IMEP rating of the spark plug.

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benefit from the accounting services rendered by Decosimo ran to Borden, individually, and to eighteen separate entities to which the Company was either a general partner, managing partner, or managing agent. While it is clear from the record that the personal accounting work done for Borden is not an administrative expense of the Company for which McMillan is liable,¹² the accounting work for the eighteen limited partnerships is a bit more complicated.

[6, 7] Decosimo argues that under Alabama law the Company, as a partner or managing agent of these partnerships, is obligated for the debts of these partnerships.¹³ Assuming, without deciding, that such is correct, the avenue for recovery for fees for Decosimo would not be as an administrative expense, but as an unsecured creditor. Accounting fees arising from services performed for other debtors in separate bankruptcy proceedings and arising from work for entities other than the debtor in this case are not fees incurred in the upkeep and maintenance of this debtor's estate and therefore are not to be reimbursed as an administrative expense. The tenuous and incidental benefit Decosimo alleges it provided the Company, without more, is insufficient basis for administrative priority status. *See In re Appliance Store, Inc.*, 181 B.R. 287, 242 (Bankr.W.D.Pa.1995). Rather than give Decosimo a leg up on the other creditors of the Company by granting its fee claims administrative expense priority, we would require Decosimo to proceed against each of the parties for whom the services were rendered. If Decosimo is successful in its suits against these limited partnerships, and if it were found that the Company is liable for Decosimo's fees, then Decosimo would stand as a creditor of the Company, no more and no less. Given the Bankruptcy Code's overriding concern for keeping administrative ex-

penses to a minimum so as to preserve as much of the estate as possible for the creditors, we must carefully review the legitimacy of such claims. *See Otte v. United States*, 419 U.S. 43, 53, 95 S.Ct. 247, 254, 42 L.Ed.2d 212 (1974). Decosimo's fees for work performed for other entities are simply not administrative expenses of the Company for which McMillan is liable under the cash collateral agreement.

IV. CONCLUSION

For the foregoing reasons, we AFFIRM the judgment of the United States District Court for the Northern District of Alabama.

AFFIRMED.



In re CLEMENT.

No. 97-1202.

United States Court of Appeals,
Federal Circuit.

Dec. 12, 1997.

Rehearing Denied; Suggestion for
Rehearing In Banc Declined
Feb. 18, 1998.

Patentee filed reissue application in connection with patent claiming method of treating waste paper to remove certain elements. The Board of Patent Appeals and Interferences sustained patent examiner's rejection of claims contained in reissue application, and patentee appealed. The Court of Appeals, Mayer, Circuit Judge, held that: (1) claims in reissue application which were broader than they were narrower in manner directly pertinent to subject matter that patentee surren-

claim against the Company's estate for these services.

12. There is no written or verbal agreement by either the Company or McMillan to pay for the accounting services rendered to Borden. Decosimo contends that Borden told Decosimo that McMillan would pay for these services. The Company was never invoiced for these services; in fact, Decosimo only invoiced Borden in its search for payment. Consequently, there is no legal basis to allow Decosimo and administrative

13. Decosimo contends Ala.Code § 10-8-52(2) renders the Company liable for the debts of the various partnerships. § 10-8-52 states: "All partners are liable ... (2) Jointly and severally for all debts and obligations of the partnership, except as may be otherwise provided by law."

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dered throughout prosecution of patent were barred by recapture rule, and (2) defective declaration alone would not invalidate other claims that were not subject to recapture rule.

Affirmed in part and vacated in part.

1. Patents \S 144

Determining whether applicant for reissue patent has met statutory requirements is question of law, which Court of Appeals reviews de novo, although legal conclusion is based on underlying findings of fact, which Court sustains unless they are clearly erroneous. 35 U.S.C.A. \S 251.

2. Patents \S 136

Attorney's failure to appreciate full scope of invention qualifies as error under statute permitting reissue of defective patents and is correctable by reissue, but deliberate withdrawal or amendment cannot be said to involve inadvertence or mistake contemplated by statute. 35 U.S.C.A. \S 251.

3. Patents \S 141(6)

Recapture rule prevents patentee from regaining through reissue subject matter that patentee surrendered in effort to obtain allowance of original claims, such that claims that are broader than original patent claims in manner directly pertinent to subject matter surrendered during prosecution are impermissible.

4. Patents \S 141(6)

In applying recapture rule, which prevents patentee from regaining through reissue subject matter that patentee surrendered in effort to obtain allowance of original claims, court first determines whether and in what aspect reissue claims are broader than patent claims and then determines whether broader aspects of reissue claims relate to surrendered subject matter. 35 U.S.C.A. \S 251.

5. Patents \S 141(6)

To determine whether applicant for reissue patent surrendered particular subject matter, Court of Appeals looks to prosecution history for arguments and changes to claims

made in effort to overcome prior art rejection. 35 U.S.C.A. \S 251.

6. Patents \S 141(6)

Although recapture rule, which prevents patentee from regaining through reissue subject matter that patentee surrendered in effort to obtain allowance of original claims, does not apply in absence of evidence that applicant's amendment was admission that scope of that claim was not in fact patentable, court may draw inferences from changes in claim scope when other reliable evidence of patentee's intent is not available. 35 U.S.C.A. \S 251.

7. Patents \S 168(2.2)

Deliberately canceling or amending patent claim in effort to overcome reference strongly suggests that applicant admits that scope of claim before cancellation or amendment is unpatentable, but it is not dispositive because other evidence in prosecution history may indicate the contrary.

8. Patents \S 141(6)

Once court determines that applicant for reissue patent has surrendered subject matter of canceled or amended claim, court then determines whether surrendered subject matter has crept into reissue claim.

9. Patents \S 141(6)

If scope of reissue claim is same as or broader than that of canceled claim, then patentee is clearly attempting to recapture surrendered subject matter and reissue claim is, therefore, unallowable, but reissue claim narrower in scope escapes recapture rule entirely.

10. Patents \S 141(6)

If reissue claim is broader in some aspects, but narrower in others than canceled patent claim, then if reissue claim is as broad as or broader in aspect germane to prior art rejection, but narrower in another aspect completely unrelated to rejection, recapture rule bars claim; but, if reissue claim is narrower in aspect germane to prior art rejection, and broader in aspect unrelated to rejection, recapture rule does not bar claim, but other rejections are possible.

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11. Patents ⇐141(6)

Claims in application for reissue patent which were broader than they were narrower in manner directly pertinent to subject matter that patentee surrendered throughout prosecution of patent, which claimed method of treating waste paper to remove certain elements, were barred by recapture rule, regardless of whether reissue claims were broader than canceled claims in manner directly related to alleged error supporting reissue. 35 U.S.C.A. § 251.

12. Patents ⇐140

Claims in application for reissue patent that were not subject to recapture rule would not be invalidated solely by defective reissue declaration. 35 U.S.C.A. § 252.

13. Patents ⇐140

Claims in reissue application that were not different from claims in original patent could not alone support reissue application. 35 U.S.C.A. § 251.

Lawrence M. Green, Wolf, Greenfield & Sacks, P.C., Boston, MA, argued for appellant. With him on the brief was Christopher S. Schultz.

John M. Whealan, Associate Solicitor, Office of the Solicitor, Patent and Trademark Office, Arlington, VA, argued for appellee. With him on the brief were Nancy J. Linck, Solicitor, Albin F. Drost, Deputy Solicitor, and Scott A. Chambers, Associate Solicitor.

Before MAYER, Circuit Judge, SMITH, Senior Circuit Judge, and CLEVINGER, Circuit Judge.

MAYER, Circuit Judge.

Jean-Marie Clement appeals the decision of the United States Board of Patent Appeals and Interferences sustaining the rejection of claims 1-18 and 49-52 in reissue application Serial No. 08/064,951 under 35 U.S.C. § 251 (1994). Because the board correctly applied the recapture rule to bar claims 49-52 and because claims 1-18 alone cannot support the reissue application, we affirm in part and vacate in part.

Background

This case is about U.S. Patent No. 4,780,179 (the '179 patent) issued to Jean-Marie Clement. The '179 patent claims a method for treating waste paper that removes "stickies," such as glues and plastics, under a first set of environmental conditions, before removing inks under a second set of environmental conditions.

The '179 patent issued from application Serial No. 06/822,943 (the '943 application), which was a continuation of application Serial No. 06/482,623 (the '623 application). During prosecution, Clement amended the claims to overcome U.S. Patent No. 4,360,402, issued to Ortner et al. (Ortner), and an article written by Michael Burns entitled "Waste Paper Preparation Plant and Systems," published in the June/August 1978 issue of Paper Technology (Burns). The broadest of the '623 application's claims, original claim 1, recites:

A method of treating a mixture of printed and contaminated waste paper in order to produce pulps for the use in the manufacture of pulp and paper boards, which method comprises:

(a) forming an aqueous pulp of said waste material at low temperature, low specific mechanical energy, thereby forming a pulpable slurry and releasing the non-ink contaminants from the surface of the paper but without dispersing them inside the fibrous suspension;

(b) separating the non-ink contaminants from the pulp by mechanical separation, without the use of froth floatation or solvent extraction or other process, using conventional screens and centrifugal cleaners and without any further application of strong shear forces to the pulp;

(c) softening of the ink particles vehicles and weakening of their bondings with the surface of the fibres by submitting the pulp at a consistency of more than 15% at the simultaneous actions of (A) high temperature—between 85 and 180° C.—(B) high shear forces and (C) at least one de-inking agent, under alkaline [sic] conditions;

(d) detaching the ink particles from the surface of the fibres and dispersing them

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into the fibrous suspension by submitting the pulp to the simultaneous actions of (A) high temperature—between 85 and 130° C.—(B) high shear forces and (C) at least one chemical dispersing agent, under alkaline [sic] conditions;

(e) removing the free ink particles by means of the most appropriate known method and up to the degree of brightness required by the final use of the pulp.

In an effort to overcome Ortner, Clement submitted a preliminary amendment in the '943 application dated January 27, 1988, which replaced original claim 1 with claim 42. Claim 42 is limited to: (1) carrying out step (a) at room temperature; (2) using mechanical energy less than 50 KW.H/Ton in step (a); (3) removing the ink by applying a combination of high temperature between 85 and 130°C, mechanical energy greater than 50 KW.H/Ton, and a de-inking or chemical dispersing agent under alkaline conditions in steps (c) and (d), respectively; and (4) limiting the duration of steps (c) and (d) to between two and ten minutes. In this preliminary amendment, Clement argued that Ortner's process could not apply simultaneously the higher temperature and larger shear force (mechanical energy greater than 50 KW.H/Ton) recited in steps (c) and (d). Clement also argued that using a higher temperature in Ortner's process would prevent the final product from having the necessary brightness.

In response, the examiner withdrew the Ortner reference, but relied on Burns until Clement's amendments dated December 23, 1986, and June 29, 1987, and an examiner's amendment dated May 16, 1988, added the following limitations: (1) steps (a) and (b) remove substantially all the non-ink contaminants including the stickies; (2) steps (c) and (d) include strong alkaline conditions having a pH of at least 9; (3) the brightness of the final pulp in step (f) is at least 59 ISO; and (4) step (b) takes place at room temperature. The table at Appendix A shows claim 42 before the last two amendments. In his

December 23, 1986, amendment, Clement specifically argued that Burns fails to disclose the strong alkaline conditions having a pH greater than 9 that he added to steps (c) and (d). In his June 29, 1987, amendment, he continued to traverse the examiner's assertion that Burns discloses removing the stickies at room temperature through the application of mechanical energy lower than 50 KW.H/Ton. The patent issued on October 25, 1988, with claim 42 becoming claim 1, as shown in the table at Appendix B.

On October 18, 1990, Clement filed reissue application Serial No. 07/600,012 (the '012 application). During prosecution of the '012 application, he admitted that he added "very specific process parameters" to issued claim 1 during prosecution of the '943 application "in order to distinguish over the prior art." Clement later abandoned the '012 application in favor of continuation reissue application Serial No. 08/054,951 (the '951 application), presently on appeal. The '951 application includes claims 1-18, which correspond to claims 1-18 of the '179 patent, and claims 49-52, which are admittedly broader than the '179 patent's claims. In his reissue declaration, Clement stated that as a result of his failure to understand the claims and his attorney's failure to appreciate the scope of his invention, claims 1-18 of the '179 patent are unduly limited because "step (a) recites forming the first fibrous suspension at room temperature by applying specific mechanical energy lower than 50 KW. H/Ton." In addition, "the temperature, mechanical energy and pH conditions set forth in steps (c) and (d)" unduly limit claim 1 and claims 2-18, which depend from it. Claim 49 eliminates these limitations and the room temperature limitation in the first claim's step (b). The table at Appendix B compares reissue claim 49 with claim 1 of the '179 patent with differences italicized.

The examiner rejected claims 49-52 under 35 U.S.C. § 251 * for being broadened in a reissue application filed outside the two year statutory period. The examiner also reject-

the claims unless the patentee files the reissue application within two years of the grant of the patent.

* Section 251 allows patentees to correct "errors" made during prosecution, such as claiming less than the patentee had a right to claim. A reissue patent may not, however, enlarge the scope of

ed claims 1-18 and 49-52 under section 251 for lacking a basis for reissue because recapture is not an error so correctable. The examiner found the reissue declaration defective under 37 C.F.R. § 1.175 (1997) because it failed not only to mention the error in step (b), but also to explain sufficiently how any of the errors arose. The examiner determined that these defects were not curable because the recapture rule applied. Clement appealed the examiner's final rejection to the United States Board of Patent Appeals and Interferences (the board).

The board determined that Clement filed his broadening reissue application timely. It further found that during prosecution of the '179 patent, Clement added temperature, mechanical energy, and pH limitations to overcome prior art rejections. The board noted that the temperature limitation in step (a) and the temperature and mechanical energy limitations in steps (c) and (d) "were argued by [Clement] to be features not suggested by Ortner or Burns and ... were accepted by the examiner as distinguishing over these references." It concluded that Clement implicitly admitted that "broader claims not restricted to ... [these limitations] were not patentable over the prior art represented by Ortner." The board found that claims 49-52 do not include these limitations and concluded that the reissue claims seek to broaden the patent in a manner directly pertinent to subject matter that Clement deliberately surrendered to overcome prior art rejections. It therefore sustained the rejection of claims 49-52 for failing to comply with 35 U.S.C. § 251, and the rejection of claims 1-18 and 49-52 based on a defective reissue declaration. Clement appeals.

Discussion

[1-3] Determining whether an applicant has met the statutory requirements of 35 U.S.C. § 251 is a question of law, which we review *de novo*. *Mentor Corp. v. Coloplast, Inc.*, 998 F.2d 992, 994, 27 USPQ2d 1521, 1524 (Fed.Cir.1993). This legal conclusion is based on underlying findings of fact, which we sustain unless they are clearly erroneous. *In re Kempa*, 97 F.3d 1427, 1437, 40 USPQ2d

1309, 1312 (Fed.Cir.1996); *Mentor*, 998 F.2d at 994, 27 USPQ2d at 1524. An attorney's failure to appreciate the full scope of the invention qualifies as an error under section 251 and is correctable by reissue. *In re Wilder*, 786 F.2d 1516, 1519, 222 USPQ 369, 370-71 (Fed.Cir.1984). Nevertheless, "deliberate withdrawal or amendment ... cannot be said to involve the inadvertence or mistake contemplated by 35 U.S.C. § 251." *Haliczer v. United States*, 174 Ct.Cl. 507, 856 F.2d 541, 545, 148 USPQ 585, 569 (1986). The recapture rule, therefore, prevents a patentee from regaining through reissue the subject matter that he surrendered in an effort to obtain allowance of the original claims. See *Mentor*, 998 F.2d at 995, 27 USPQ2d at 1524. Under this rule, claims that are "broader than the original patent claims in a manner directly pertinent to the subject matter surrendered during prosecution" are impermissible. *Id.* at 996, 998 F.2d 992, 27 USPQ2d at 1525.

[4] The first step in applying the recapture rule is to determine whether and in what "aspect" the reissue claims are broader than the patent claims. For example, a reissue claim that deletes a limitation or element from the patent claims is broader in that limitation's aspect. Clement argues that the board focused too much on the specific limitations that were omitted from the reissue claims. Although the scope of the claims is the proper inquiry, *In re Richman*, 56 C.C.P.A. 1083, 409 F.2d 269, 274, 161 USPQ 359, 362 (CCPA 1969), claim language, including limitations, defines claim scope. *Abtox, Inc. v. Exutron Corp.*, 122 F.3d 1019, 1023, 43 USPQ2d 1545, 1548 (Fed.Cir.1997); *Bell Communications Research, Inc. v. Vitalink Communications Corp.*, 55 F.3d 615, 619, 84 USPQ2d 1816, 1819 (Fed.Cir.1995) ("[T]he language of the claim defines the scope of the protected invention."). Under *Mentor*, courts must determine in which aspects the reissue claim is broader, which includes broadening as a result of an omitted limitation. The board did not err by determining which limitations Clement deleted from the patent claims.

[5] The second step is to determine whether the broader aspects of the reissue

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claims relate to surrendered subject matter. To determine whether an applicant surrendered particular subject matter, we look to the prosecution history for arguments and changes to the claims made in an effort to overcome a prior art rejection. See *Mentor*, 998 F.2d at 995-96, 27 USPQ2d at 1524-25; *Ball Corp. v. United States*, 729 F.2d 1429, 1436, 221 USPQ 289, 294-95 (Fed.Cir.1984).

[6, 7] Although the recapture rule does not apply in the absence of evidence that the applicant's amendment was "an admission that the scope of that claim was not in fact patentable," *Seattle Box Co. v. Industrial Crating & Packing, Inc.*, 731 F.2d 818, 826, 221 USPQ 568, 574 (Fed.Cir.1984), "the court may draw inferences from changes in claim scope when other reliable evidence of the patentee's intent is not available," *Ball*, 729 F.2d at 1436, 221 USPQ at 294. Deliberately canceling or amending a claim in an effort to overcome a reference strongly suggests that the applicant admits that the scope of the claim before the cancellation or amendment is unpatentable, but it is not dispositive because other evidence in the prosecution history may indicate the contrary.** See *Mentor*, 998 F.2d at 995-96, 27 USPQ2d at 1524-25; *Ball*, 729 F.2d at 1438, 221 USPQ at 296; *Seattle Box Co.*, 731 F.2d at 826, 221 USPQ at 574 (declining to apply the recapture rule in the absence of evidence that the applicant's "amendment ... was in any sense an admission that the scope of [the] claim was not patentable"); *Haliczer*, 356 F.2d at 545, 148 USPQ at 569 (acquiescence in the rejection and acceptance of a patent whose claims include the limitation added by the applicant to distinguish the claims from the prior art shows intentional withdrawal of subject matter); *In re Willingham*, 48 C.C.P.A. 727, 282 F.2d 353, 354, 357, 127 USPQ 211, 213, 215 (CCPA 1960) (no intent to surrender where the applicant canceled and replaced a claim without an intervening action by the examiner). Amending a claim "by the inclusion of an additional limitation [has] exactly the same effect as if the claim as originally pre-

sented had been canceled and replaced by a new claim including that limitation." *In re Byers*, 43 C.C.P.A. 803, 230 F.2d 451, 455, 109 USPQ 53, 55 (CCPA 1956).

[8, 9] Once we determine that an applicant has surrendered the subject matter of the canceled or amended claim, we then determine whether the surrendered subject matter has crept into the reissue claim. Comparing the reissue claim with the canceled claim is one way to do this. *In re Wadlinger*, 496 F.2d 1200, 1204, 181 USPQ 826, 830 (CCPA 1974); *Richman*, 409 F.2d at 274, 161 USPQ at 362. If the scope of the reissue claim is the same as or broader than that of the canceled claim, then the patentee is clearly attempting to recapture surrendered subject matter and the reissue claim is, therefore, unallowable. *Ball*, 729 F.2d at 1436, 221 USPQ at 295 ("The recapture rule bars the patentee from acquiring, through reissue, claims that are the same or of broader scope than those claims that were canceled from the original application.") (emphasis omitted); *Byers*, 230 F.2d at 456, 109 USPQ at 56. In contrast, a reissue claim narrower in scope escapes the recapture rule entirely. *Ball*, 729 F.2d at 1436, 221 USPQ at 295.

Some reissue claims, however, are broader than the canceled claim in some aspects, but narrower in others. In *Mentor*, for example, the issued claim, which was directed to a condom catheter, recited an adhesive means that was transferred from an outer to an inner surface without turning the condom inside-out. 998 F.2d at 998, 27 USPQ2d at 1523. The issued claim also recited, *inter alia*, that the condom catheter included a "thin cylindrical sheath member of resilient material rolled outwardly upon itself to form consecutively larger rolls...." One canceled claim recited an adhesive means between the rolls, but did not specify that the adhesive was transferred from the outer to the inner surface without turning the condom inside-out. Another canceled claim recited that

** For example, if an applicant amends a broad claim in an effort to distinguish a reference and obtain allowance, but promptly files a continuation application to continue to traverse the prior art rejections, circumstances would suggest that

the applicant did not admit that broader claims were not patentable—assuming that the applicant does not ultimately abandon the continuation application because the examiner refuses to withdraw the rejections.

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adhesive was transferred from the outer to the inner surface, but did not specify that this operation was done without turning the condom inside-out. The prior art rejections focused on the obviousness of the adhesive means positioned between the rolls and the process of transferring adhesive to the inner surface of the condom.

In making amendments to the claim, the applicant argued that "none of the references relied upon actually showed the *transfer of adhesive* from the outer surface to the inner surface as the sheath is rolled up and then unrolled." *Id.* at 995-96, 998 F.2d 992, 27 USPQ2d at 1524-25 (emphasis in original). The reissue claim eliminated the limitation that adhesive was transferred from the outer to the inner layer, and was, therefore, broader in this aspect. The reissue claim was also narrower than the canceled claim because it recited that the catheter included "a thin, *flexible* cylindrical member of resilient material rolled outwardly upon itself to form a *single roll* . . ." (Emphasis added). We held that, although the "flexible" and "single roll" limitations made the reissue claim narrower than both the canceled and issued claims, it did not escape the recapture rule because these limitations did not "materially narrow the claim[]." *Id.* at 996-97, 27 USPQ2d at 1525-26.

Similarly, in *Boll*, the issued claim recited "a plurality of feedlines" and a "substantially cylindrical conductor." 729 F.2d at 1432-83, 221 USPQ at 291-92. The canceled claim recited "feed means includ[ing] at least one conductive lead," and a "substantially cylindrical conductor." The prosecution history showed that the patentee added the "plurality of feedlines" limitation in an effort to overcome prior art, but the cylindrical configuration limitation was neither added in an effort to overcome a prior art rejection, nor argued to distinguish the claims from a reference. *Id.* The reissue claim included limitations not present in the canceled claims that related to the feed means element, but allowed for multiple feedlines. On balance, the claim was narrower than the canceled claim with respect to the feed means aspect. The reissue claim also deleted the cylindrical configuration limitation, which made the claim

broader with respect to the configuration of the conductor. *Id.* at 1437, 729 F.2d 1429, 221 USPQ at 295. We allowed the reissue claim because the patentee was not attempting to recapture surrendered subject matter. *Id.* at 1438, 729 F.2d 1429, 221 USPQ at 296.

[10] In both *Mentor* and *Boll*, the relevance of the prior art rejection to the aspects narrowed in the reissue claim was an important factor in our analysis. From the results and reasoning of those cases, the following principles flow: (1) if the reissue claim is as broad as or broader than the canceled or amended claim in all aspects, the recapture rule bars the claim; (2) if it is narrower in all aspects, the recapture rule does not apply, but other rejections are possible; (3) if the reissue claim is broader in some aspects, but narrower in others, then: (a) if the reissue claim is as broad as or broader in an aspect germane to a prior art rejection, but narrower in another aspect completely unrelated to the rejection, the recapture rule bars the claim; (b) if the reissue claim is narrower in an aspect germane to prior art rejection, and broader in an aspect unrelated to the rejection, the recapture rule does not bar the claim, but other rejections are possible. *Mentor* is an example of (3)(a); *Boll* is an example of (3)(b).

[11] In our case, reissue claim 49 is both broader and narrower in areas relevant to the prior art rejections. Comparing reissue claim 49 with claim 42 before the May 1988 and June 1987, amendments (see the tables at Appendices A and B), we see that claim 49 is narrower in one area, namely, the brightness is "at least 59 ISO in the final pulp." This narrowing relates to a prior art rejection because, during the prosecution of the '179 patent, Clement added this brightness limitation in an effort to overcome Burns. Our comparison also reveals that reissue claim 49 is broader in that it eliminates the room temperature and specific energy limitations of step (a), and the temperature, specific energy, and pH values of steps (c) and (d). This broadening directly relates to several prior art rejections because, in an effort to overcome Ortner, Clement added to step (a) the limitation that it is carried out "at room temperature," and applies "specific

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mechanical energy lower than 50 KW.H/Ton to form a pumpable slurry." He argued, moreover, that the latter limitation overcame Burns despite the examiner's contention to the contrary. Clement also added to steps (c) and (d) the temperature and specific energy values in an effort to overcome Ortier and the "strong" alkaline conditions "having a pH of at least 9" limitation in an effort to overcome Burns. Clement admitted, furthermore, that he added these very specific process parameters "in order to distinguish over the prior art." Claim 49 omits each of these limitations.

On balance, reissue claim 49 is broader than it is narrower in a manner directly pertinent to the subject matter that Clement surrendered throughout the prosecution. Even with the additional limitations, claims 50-52 are also broader than they are narrower in a manner directly pertinent to the subject matter that Clement surrendered during prosecution.

We do not address whether the reissue claims in this case are broader than the canceled claims in a manner directly related to the alleged error supporting reissue because we see no dispositive significance in this inquiry. In *Ball*, we said that the recapture rule does not apply when the reissue claim is broader than the canceled claim in a manner unrelated to the alleged error supporting reissue, but did not address whether the recapture rule would apply if the broadening did relate to the alleged error. 729 F.2d at 1438, 821 USPQ at 296. We can envision a scenario in which the patentee intentionally fails to enumerate an error so that he may eliminate a limitation that he argued distinguished the claim from a reference, or added in an effort to overcome a reference and claim protection under *Ball*. We therefore think *Ball* is limited to its facts: the recapture rule does not apply when the broadening not only relates to an aspect of the claim that was never narrowed to overcome prior art, or argued as distinguishing the claim from the prior art, but also is not materially related to the alleged error. Accordingly, *Ball* does not require us to determine whether the broader aspects of

the reissue claims are related to the alleged error supporting reissue.

Clement argues that, although claim 49 is broader than the issued claims, it is materially narrower than original claim 1; therefore, the recapture rule should not apply. He relies on the unsupported assumption that, for purposes of the recapture rule, we should compare the scope of the reissue claims with that of only original claim 1 to determine whether or not the reissue claim is broader in a material way. Clement has chosen original claim 1 as the basis for comparison because, in his view, it does not include limitations enumerated by the board as missing from the reissue claims. These limitations are the room temperature limitation in step (a) and the specific values of the specific energy limitations in steps (c) and (d).

Clement's assumption ignores the board's finding that the reissue claims delete the value of the high temperature and pH limitations in steps (c) and (d) and the room temperature limitation of step (b). It also ignores much of the prosecution history. The prosecution history shows that Clement abandoned the subject matter of claim 42 as it existed before the examiner's amendment dated May 16, 1988, because he allowed the examiner to amend it to obtain allowance and no other evidence suggests that Clement did not intend to abandon it. He also abandoned the subject matter of claim 42 as it existed before his June 29, 1987, amendment, as it existed before his December 23, 1986, amendment, and as it existed in his preliminary amendment. Based on his actions and statements in the prosecution history of the '179 patent and his admission in the history of the '012 application, every time Clement amended his claims, he intentionally omitted or abandoned the claimed subject matter. Furthermore, his argument that we should compare reissue claim 49 with original claim 1 is reminiscent of the patentee's unsuccessful argument in *Hyers*. There the patentee argued that the reissue claims were "intermediate in scope between certain broad claims which were canceled from [the patentee's] original application and the limited claim allowed in the patent." 230 F.2d at 457, 109 USPQ at 57. In response, the court

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noted that the "rejection is not based on the cancellation of the broader claims referred to in [the patentee's] brief.... The fact that there were other claims whose cancellation did not constitute such a bar is immaterial." *Id.*

We agree with the board's conclusion that the reissue claims are broader than the patent claims in a manner directly pertinent to the subject matter that Clement surrendered during prosecution. Therefore, it correctly applied the recapture rule, and we affirm the board's decision to sustain the examiner's rejection of claims 49-52.

[12] Because we affirm the board's decision on recapture, Clement cannot cure the allegedly defective declaration with respect to claims 49-52. As a result, we do not reach that issue. Because claims 1-18 are not subject to the recapture rule, however, a defective declaration would not, in and of itself, invalidate them. The Commissioner concedes this point and reminds that, because under 35 U.S.C. § 252 (1994) the surrender of the '179 patent does not take effect until the reissue patent issues, "original claims 1-18 continue to exist with their normal presumption of validity," unaffected by the examiner's rejection based on the allegedly defective declaration. We, therefore, vacate the board's decision to the extent that it

rejects claims 1-18 because of the allegedly defective declaration.

[13] Claims 1-18 alone cannot support a reissue application. *See In re Keil*, 808 F.2d 830, 830, 1 USPQ2d 1427, 1428 (Fed.Cir. 1987) (Section 251 requires a change in "either the patent specification or claims."); *In re Dien*, 680 F.2d 151, 152 n. 4, 214 USPQ 10, 12 n. 4 (CCPA 1982) ("[I]t goes without saying that reissue of a patent in identical form with the original patent is not a possibility."). The '951 application would fail, therefore, to comply with section 251 even if Clement were to cure the allegedly defective declaration.

Conclusion

Accordingly, the decision of the Board of Patent Appeals and Interferences sustaining the rejection of claims 49-52, and to reject the reissue application is affirmed, and its decision to reject original claims 1-18 is vacated.

COSTS

Each party shall bear its own costs.

**AFFIRMED IN PART AND VACATED
IN PART.**

ATTACHMENT
APPENDIX A

Claim 42

Before Clement's Amendment on
6/29/87

A method of treating a mixture of printed and contaminated waste paper in order to produce pulps for use in the manufacture of paper and paperboards, which method comprises:

(a) forming an aqueous fibrous suspension of said waste paper at room temperature without deinking agents by applying specific mechanical energy lower than [sic] 50 KW. H/Ton to form a pumpable slurry and to release the non-ink contaminants, from the surface of the paper fibers in the absence of deinking agents and without dispersing such non-ink contaminants as finely divided particles throughout the fibrous suspension;

(b) removing the released non-ink contaminants from the fibrous suspension by screening and cleaning;

Claim 42

Before Examiner's Amendment on
5/16/88

A method of treating a mixture of printed and contaminated waste paper in order to produce pulps for use in the manufacture of paper and paperboards, which method comprises:

(a) forming a first aqueous fibrous suspension of said waste paper at room temperature by applying specific mechanical energy lower than [sic] 50 KW.H/Ton to form a pumpable slurry and to release the non-ink contaminants, from the surface of the paper and without dispersing such non-ink contaminants as finely divided particles throughout the fibrous suspension;

(b) removing the non-ink contaminants which have been released without dispersal as finely divided particles from the first fibrous

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ATTACHMENT—Continued

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Claim 42

Before Clement's Amendment on

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(c) softening the ink vehicles and weakening their binding with the surface of the fibers by submitting the fibrous suspension at a consistency of more than 15% to the simultaneous actions of (A) a high temperature between 85° and 130° C, (B) high shear forces substantially corresponding to a specific mechanical energy of more than 50 KW.H/Ton applied at the said consistency of more than 15% and (C) at least one deinking agent under strong alkaline conditions having a pH preferably greater than 9;

(d) detaching the ink particles from the surface of the fibers and dispersing them into the fibrous suspension by submitting the fibrous suspension to the simultaneous actions of (A) high temperature between 85° and 130° C; (B) high shear forces substantially corresponding to a specific mechanical energy of more than 50 KW.H/Ton applied at the said consistency of more than [sic] 15% and (C) at least one chemical dispersing agent, under strong alkaline conditions having a pH preferably greater than 9;

(e) limiting the total duration of the ink softening and detaching steps (c) and (d) to a range between 2 and 10 minutes and

(f) removing the detached ink particles from the fibrous suspension to provide the degree of brightness required in the final product of the pulp.

Claim 42

Before Examiner's Amendment on

5/16/88

suspension by screening and cleaning to form a second aqueous fibrous suspension substantially free of non-ink contaminants;

(c) after the step of removing the non-ink contaminants softening the ink vehicles and weakening their binding with the surface of the fibers by submitting the second fibrous suspension at a consistency of more than 15% to the simultaneous actions of (A) a high temperature between 85° and 130° C, (B) high shear forces substantially corresponding to a specific mechanical energy of more than 50 KW.H/Ton applied at the said consistency of more than 15% and (C) at least one deinking agent under strong alkaline conditions having a pH of at least 9; and

(d) detaching the ink particles from the surface of the fibers and dispersing them into the second fibrous suspension by submitting the second fibrous suspension to the simultaneous actions of (A) high temperature between 85° and 130° C, (B) high shear forces substantially corresponding to a specific mechanical energy of more than [sic] 50 KW.H/Ton applied at the said consistency of more than 15% and (C) at least one chemical dispersing agent, under strong alkaline conditions having a pH of at least 9 whereby higher specific energy inputs and higher temperatures are used to detach the ink particles from the fibers of the second fibrous suspension after removal of the non-ink contaminants than are used on the first fibrous suspension before removal of the non-ink contaminants;

(e) limiting the total duration of the ink softening and detaching steps (c) and (d) to a range between 2 and 10 minutes and

(f) removing the detached ink particles from the second fibrous suspension to provide the degree of brightness required in the final product of the pulp.

APPENDIX B

Patent Claim 1

A method of treating a mixture of printed and contaminated waste paper in order to produce a pulp for use in the manufacture of paper and paperboards, said waste paper containing non-ink contaminants including stickies, which method comprises:

(a) forming a first aqueous fibrous suspension of said waste paper at room temperature

Reissue Claim 49

A method of treating a mixture of printed and contaminated waste paper in order to produce a pulp for use in the manufacture of paper and paperboards, said waste paper containing non-ink contaminants including stickies, which method comprises:

(a) forming a first aqueous fibrous suspension of said waste paper at a temperature

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ATTACHMENT—Continued

Patent Claim 1

by applying specific mechanical energy lower than [sic] 50 KW.H/Ton to form a pumpable slurry and to release substantially all of the non-ink contaminants including the stickies, from the surface of the paper and without dispersing such non-ink contaminants as finely divided particles throughout the fibrous suspension;

(b) removing substantially all of the non-ink contaminants including the stickies, which have been released without dispersal as finely divided particles from the first fibrous suspension by screening and cleaning at room temperature to form a second aqueous fibrous suspension substantially free of the non-ink contaminants including the stickies;

(c) after the step of removing the non-ink contaminants softening the ink vehicles and weakening their binding with the surface of the fibers by submitting the second fibrous suspension at a consistency of more than 15% to the simultaneous actions of (A) a high temperature between 85° and 130°C., (B) high shear forces substantially corresponding to a specific mechanical energy of more than 50 KW.H/Ton applied at the said consistency of more than 15% and (C) at least one deinking agent under strong alkaline conditions having a pH of at least 9; and

(d) detaching the ink particles from the surface of the fibers and dispersing them into the second fibrous suspension by submitting the second fibrous suspension to the simultaneous actions of (A) high temperature between 85° and 130°C., (B) high shear forces substantially corresponding to a specific mechanical energy of more than 50 KW.H/Ton applied at the said consistency of more than [sic] 15% and (C) at least one chemical dispersing agent, under strong alkaline conditions having a pH of at least 9 whereby higher specific energy inputs and higher temperatures are used to detach the ink particles from the fibers of the second fibrous suspension after removal of the non-ink contaminants than are used on the first fibrous suspension before removal of the non-ink contaminants;

(e) limiting the total duration of the ink softening and detaching steps (c) and (d) to a range between 2 and 10 minutes and

(f) removing the detached ink particles from the second fibrous suspension to provide a brightness of at least [sic] 59 ISO [in] the final pulp.

Reissue Claim 49

below the melting point of the non-ink contaminants by applying specific mechanical energy sufficient to form a pumpable slurry and to release substantially all of the non-ink contaminants including the stickies, from the surface of the paper and without dispersing such non-ink contaminants as finely divided particles throughout the fibrous suspension;

(b) removing substantially all of the non-ink contaminants including the stickies, which have been released without dispersal as finely divided particles from the first fibrous suspension by screening and cleaning to form a second aqueous fibrous suspension substantially free of the non-ink contaminants including the stickies;

(c) after the step of removing the non-ink contaminants, (1) softening the ink vehicles and weakening their binding with the surface of the fibers, and then (2) detaching the ink particles from the surface of the fibers and dispersing the particles into the second fibrous suspension by submitting the second fibrous suspension at a consistency of more than 15% to the simultaneous actions of temperature, pressure, specific energy and chemical dosing sufficient to insure softening of the ink vehicles,

detachment of the ink particles from the surface of the fibers and dispersion of the detached ink particles into the second fibrous suspension, whereby higher specific energy inputs and higher temperatures are used to detach the ink particles from the fibers of the second fibrous suspension after removal of the non-ink contaminants than are used on the first fibrous suspension before removal of the non-ink contaminants;

(d) limiting the total duration of step (c)(1) and (c)(2) to a range between 2 and 10 minutes and

(e) removing the detached ink particles from the second fibrous suspension to provide a brightness of at least 59 ISO in the final pulp.